

AD-218088

FORECASTING TRAFFICABILITY OF SOILS

# DEVELOPMENT AND TESTING OF SOME AVERAGE RELATIONS FOR PREDICTING SOIL MOISTURE



TECHNICAL MEMORANDUM NO. 3-331

Report 5

June 1959

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U. S. Army Engineer Waterways Experiment Station  
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## PREFACE

This report presents progress on the development and testing of methods for predicting the moisture content of soils. It is a part of phase II of the Corps of Engineers Subproject 8-70-05-400, "Trafficability of Soils as Related to the Mobility of Military Vehicles," under Project 8-70-00-000, "Ground Mobility Research." The two phases of the subproject are: I, the development of instruments and techniques for determining the trafficability of fine- and coarse-grained soils and snow by ground reconnaissance parties; and II, the development of methods for estimating the trafficability of soil or snow without complete physical contact with it.

Phase I studies were begun in 1945, and work with fine-grained soils is essentially complete. Development of instruments and techniques for measuring the trafficability of coarse-grained soils is well advanced, and work with snow is in progress. Phase I soil studies are described in the series of reports, Technical Memorandum 3-240, Trafficability of Soils, listed on the inside of the back cover of this volume. Studies in snow are reported in the series, Technical Memorandum 3-414, Trafficability of Snow.

Phase II consists of two parts: one, a study of the use of aerial photographs for estimating trafficability; the other, a detailed study for predicting the effects of weather, physiography, soil properties, vegetation, and other physical phenomena on the trafficability of soils. The two parts, now being studied independently, are meant to complement each other in the application stage. The airphoto study is being conducted by Purdue University under contract to the U. S. Army Engineer Waterways Experiment Station. This work is substantially complete. Soil-weather studies have been in progress at the Waterways Experiment Station since 1948. In 1951,



the U. S. Forest Service began working with the Corps of Engineers in developing a method for predicting soil moisture, the factor that had been found to have the greatest influence on soil strength and hence soil trafficability.

This report was prepared by the Vicksburg Research Center (formerly called the Vicksburg Infiltration Project) of the Southern Forest Experiment Station, U. S. Department of Agriculture, in cooperation with the Army Mobility Research Center, U. S. Army Engineer Waterways Experiment Station, Corps of Engineers. It is the fifth report in the series, Technical Memorandum 3-331, Forecasting Trafficability of Soils, listed on the inside of the front cover.

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## CONTENTS

|   | <u>Page</u> |
|---|-------------|
| PREFACE . . . . .   | iii         |
| SUMMARY . . . . .   | xi          |
| PART I: INTRODUCTION . . . . .  | 1           |
| Objectives of the Prediction Studies . . . . .  | 1           |
| Uses for Prediction Procedures . . . . .  | 2           |
| Previous Developments . . . . .   | 2           |
| This Investigation . . . . .  | 3           |
| Purpose and Scope of This Report . . . . .  | 4           |
| Definitions . . . . .   | 5           |
| PART II: DEVELOPMENT OF TENTATIVE AVERAGE MOISTURE-PREDICTION<br>RELATIONS . . . . .  | 11          |
| Approximation of the Field-maximum Moisture Content . . . . .                         | 13          |
| Approximation of the Field-minimum Moisture Content . . . . .                         | 17          |
| Minimum-size Storm . . . . .  | 18          |
| Accretion Relations . . . . .   | 18          |
| Depletion Relations . . . . .   | 20          |
| Transition Dates . . . . .  | 27          |
| PART III: APPLICATION OF TENTATIVE AVERAGE MOISTURE-PREDICTION<br>RELATIONS . . . . . | 31          |
| General Procedures Used . . . . .   | 31          |
| Tests on Prediction Development Sites . . . . .                                       | 32          |
| Tests on Trafficability-university Sites . . . . .                                    | 34          |
| Tests on Survey Sites . . . . .   | 36          |
| Studies to Determine the Source of Prediction Error . . . . .                         | 39          |
| PART IV: CONCLUSIONS AND RECOMMENDATIONS . . . . .                                    | 48          |
| Conclusions . . . . .   | 48          |
| Recommendations . . . . .   | 49          |



# CONTENTS (Continued)

|   | <u>Page</u> |
|---|-------------|
| APPENDIX A: TENTATIVE AVERAGE SOIL-MOISTURE PREDICTION RELATIONS<br>AND A SAMPLE OF THEIR APPLICATION . . . . .                               | A1          |
| Sample Prediction . . . . .   | A1          |
| Tables for Approximating Field-maximum and -minimum Moisture<br>Contents, Transition Dates, and Accretion Values . . . . .                    | A6          |
| Tables for Determining Depletion Relations . . . . .  | A10         |
| APPENDIX B: DESCRIPTIONS AND SOIL PROPERTIES OF STRENGTH-MOISTURE<br>SURVEY SITES . . . . .   | B1          |
| Objectives of Survey and Scope of Appendix B . . . . .  | B1          |
| Survey Regions . . . . .  | B1          |
| Selection of Sites, and Survey Procedures . . . . .   | B3          |
| Site Locations and Descriptions . . . . .   | B6          |
| Soil Properties . . . . .   | B8          |
| Soil-moisture Content and Strength Data . . . . .   | B10         |
| TABLES B1-B3d   |             |
| APPENDIX C: SOME OBSERVATIONS OF RUNOFF WITH CLASS I ACCRETIONS . .   | C1          |
| APPENDIX D: SOIL-MOISTURE VARIATION STUDY . . . . .   | D1          |
| APPENDIX E: SOLAR RADIATION AND OTHER METEOROLOGICAL FACTORS AND<br>SOIL-MOISTURE DEPLETION ON LOESS NEAR VICKSBURG,<br>MISSISSIPPI . . . . . | E1          |
| Objectives of Study . . . . .   | E1          |
| Study Area and Instrumentation . . . . .  | E1          |
| Analyses . . . . .  | E5          |
| Results and Discussion . . . . .  | E10         |
| Concluding Statement . . . . .  | E14         |
| TABLES E1-E3  |             |
| APPENDIX F: A STUDY OF CULTIVATION AND SOIL PROPERTIES THAT AFFECT<br>TRAFFICABILITY . . . . .  | F1          |
| Purpose of Study . . . . .  | F1          |
| Test Treatments . . . . .   | F1          |
| Plot Layout and Sampling Plan . . . . .   | F1          |
| Vegetation on Plots . . . . .   | F2          |
| Results . . . . .   | F3          |
| Conclusions . . . . .   | F7          |



### List of Tables

| <u>Table</u> | <u>Title</u>  | <u>Page</u> |
|--------------|---|-------------|
| 1            | Classification of Sites by Wetness Index  | 14          |
| 2            | Accumulative Daily Moisture Loss From Field Maximum,<br>Surface to 6-in. Layer  | 24          |
| 3            | Accumulative Daily Moisture Loss From Field Maximum,<br>6- to 12-in. Layer  | 25          |
| 4            | Approximate Seasonal Transition Dates Determined From<br>Prediction Development Sites   | 28          |
| 5            | Transition Dates Determined for Survey Sites Regions  | 29          |
| 6            | Average Deviations, in Inches of Water, Between Measured<br>Moisture Content and That Predicted From Specific and<br>Tentative Average Relations  | 33          |
| 7            | Average Deviations, in Inches of Water, Between Measured and<br>Predicted Moisture Content for Prediction Development Sites<br>Grouped by Texture and Wetness Index for Specific and<br>Tentative Average Relations | 34          |
| 8            | Average Deviations, in Inches of Water, Between Measured<br>Moisture Content on Trafficability-university Sites and<br>That Predicted Using Tentative Average Relations   | 35          |
| 9            | Deviations Between Measured and Predicted Moisture Content<br>of Soils Grouped by Wetness Index and Texture   | 40          |
| 10           | Deviations Between Measured and Predicted Moisture Content<br>of Soils Grouped by Wetness Index and Organic Matter  | 41          |
| 11           | Deviation Between Measured and Predicted Moisture Content<br>Based on the Frequency of Wet Periodic Moisture Samples  | 42          |
| 12           | Deviation Between Measured and Predicted Moisture Content<br>of Sites Grouped by Various Minor Factors  | 43          |
| 13           | Deviations Between Measured and Predicted Moisture Content<br>of Soils Grouped by Wetness Index and Regions   | 45          |
| 14           | Deviations Between Measured and Predicted Moisture Content<br>of Soils Grouped by Texture and Regions   | 45          |
| 15           | Deviations Between Measured and Predicted Moisture Content<br>of Wetness-index-2 Sites Grouped by Texture and Regions   | 46          |



| <u>Table</u> | <u>Title</u>  | <u>Page</u> |
|--------------|---|-------------|
| 16           | Deviations Between Measured and Predicted Moisture Content of Soils Grouped by Organic Matter and Regions | 47          |
| A1           | Equations for Approximating Field-maximum and -minimum Soil-moisture Contents                             | A6          |
| A2           | Average Transition Dates for Various Regions in the United States   | A7          |
| A3           | Average Accretion Values for All Sites, Inches of Water, Class I Accretions                               | A8          |
| A4           | Average Accretion Values for All Sites, Inches of Water, Class II Accretions                              | A9          |
| A5           | Average Accumulative Moisture Loss in Inches of Water From Field Maximum for Summer Season                | A11         |
| A6           | Factors for Adjusting Average Summer Loss to Estimated Summer Loss Values                                 | A12         |
| A7           | Average Depletion Rates, in. of Water by Depth, Season, and Textural Group                                | A13         |
| B1           | Location and Description of Strength-Moisture Survey Sites  |             |
| B2a          | Soil Properties of Strength-Moisture Survey Sites, Southern Region  |             |
| B2b          | Soil Properties of Strength-Moisture Survey Sites, Northeastern Region                                    |             |
| B2c          | Soil Properties of Strength-Moisture Survey Sites, Lake States Region                                     |             |
| B2d          | Soil Properties of Strength-Moisture Survey Sites, Intermountain Region                                   |             |
| B3a          | Soil Moisture Content and Strength Data of Survey Sites, Southern Region                                  |             |
| B3b          | Soil Moisture Content and Strength Data of Survey Sites, Northeastern Region                              |             |
| B3c          | Soil Moisture Content and Strength Data of Survey Sites, Lake States Region                               |             |



| <u>Table</u> | <u>Title</u>   | <u>Page</u> |
|--------------|--|-------------|
| B3d          | Soil Moisture Content and Strength Data of Survey Sites, Intermountain Region                              |             |
| C1           | Frequency of Runoff with Class I Accretions  | C4          |
| D1           | Soil-moisture Variation Site and Sampling Information  | D3          |
| D2           | Soil-moisture Variation at Eight Sites   | D3          |
| D3           | Soil-moisture Variation by Depth: Standard Deviation(s) of Moisture Content of a Single Gravimetric Sample | D6          |
| E1           | Soil-moisture Loss and Radiation Values from Radiation Site, 1954  |             |
| E2           | Air and Soil Temperature Values from Radiation Site, 1954  |             |
| E3           | Miscellaneous Climatic Values from Radiation Site, 1954  |             |
| F1           | Deviations Between Predicted and Measured Soil-moisture Contents of the Cultivation Test                   | F3          |
| F2           | Average Bulk-density Values Obtained in a Cultivation Test   | F6          |

#### List of Illustrations

| <u>Figure</u> |  |    |
|---------------|--|----|
| 1             | Class I and Class II tentative average accretion relations, surface to 6-in. and 6- to 12-in. layers             | 20 |
| 2             | Curves showing average moisture loss from field maximum, surface to 6-in. layer by seasons and textural groups   | 22 |
| 3             | Curves showing average moisture loss from field maximum, 6- to 12-in. layer by seasons and textural groups       | 23 |
| A1            | Soil-moisture prediction form showing data derived in sample prediction for site 246, Holly Springs, Mississippi | A2 |
| A2            | Depletion tabulation for site 246, Holly Springs, Mississippi  | A3 |
| B1            | Location of soil strength-moisture survey sites  | B4 |
| B2            | Sampling system for survey sites   | B5 |



| <u>Figure</u> | <u>Title</u>   | <u>Page</u> |
|---------------|--|-------------|
| E1            | Location of instruments and plots - solar radiation site   | E3          |
| F1            | The effect of cultivation on soil-moisture content at three layers, cultivation site, Vicksburg, Mississippi, 1955 | F4          |
| F2            | Soil moisture-strength relations. Cultivation test area, 6- to 12-in. layer  | F8          |



## SUMMARY

From detailed observations made in previous studies of sites distributed throughout the United States, a series of equations, factors, and average soil-moisture relations was derived for use in application of the previously developed soil-moisture content prediction method to sites for which specific data on the moisture regime are not available. Equations were developed to approximate field-maximum and -minimum moisture contents; factors were selected for transition dates and minimum-size storm; and moisture-accretion and -depletion relations were developed to express rates of soil wetting and drying.

The average relations were tested on 24 sites that had been used in the development of the prediction method, on 10 sites located at several universities for which soil strength and moisture data were available, and on 617 sites located throughout the United States for which detailed data were not available. Comparison of predicted with measured values was made. Accuracy of prediction of soil moisture was within reasonable limits of error for well-drained soils. However, the accuracy for wet soils, soils with a high water table, or soils with appreciable organic matter was not good. Also difficulties were found in setting transition dates for making the proper seasonal application of depletion curves.

The soil-moisture prediction method developed and a sample of its application are given in Appendix A. Appendix B describes the 617 sites with limited data used in this investigation. Appendices C, D, E, and F present results of special studies made to improve the accuracy of the prediction method.

Completion of this report marks the end of the first stage of soil-moisture prediction research with the development of a workable prediction method. Future work will be directed toward a more fundamental study of the hydrologic conditions that affect soil moisture and trafficability, and their prediction. Analysis of past and current work will be continued in an effort to reduce the number and complexity of factors required for prediction and increase the accuracy of effect of each of the applicable factors.



# FORECASTING TRAFFICABILITY OF SOILS

## DEVELOPMENT AND TESTING OF SOME AVERAGE RELATIONS

### FOR PREDICTING SOIL MOISTURE

#### PART I: INTRODUCTION

##### Objectives of the Prediction Studies

1. The trafficability of soils is affected by the relation of their moisture contents to the nature, arrangement, size, and distribution of the inorganic and organic soil particles, and by other interrelated environmental factors. Thus, the trafficability of a given soil is affected primarily by changes in its moisture content. If the characteristics of a soil are known and its water content can be predicted, it should be possible to forecast its trafficability from the known relation between soil moisture and strength. However, in the characterization of a given soil in terms of trafficability many interrelated factors must be considered, some of which are difficult to measure accurately. Consequently, in trafficability prediction, many of these factors will have to be estimated rather than measured. A primary purpose of the prediction studies is to reduce the number of factors used to describe a given condition to the minimum, and then find means of characterizing each of these essential factors with the greatest possible accuracy. Another purpose of these studies is to improve estimating methods until a reasonably accurate forecast of trafficability can be made without on-the-ground measurements.

2. Physical properties often vary considerably over a given soil area; for example, soil structure and compactness can change across fence lines as a result of differences in agricultural practices. Other differences are due to the soil's deposition, development, and erosion, and the presence of roots, root channels, stones, and foreign matter. Because surface soils possess an inherent variability in these factors, the forecast cannot be expected to define trafficability with the precision that can be obtained in ground reconnaissance with instruments and techniques developed for the purposes. However, it appears probable that



trafficability can be forecast with reasonable accuracy and within known limits of probability.

### Uses for Prediction Procedures

3. Forecasts of trafficability have direct application to the vital problem of mobility of ground forces. Although now effective on only a limited range of soils, present methods if refined and extended could provide a means of forecasting mobility over broad areas within stated limits of error. For strategic purposes, estimates could be made of the average number of days in a given season that vehicles of certain types might be expected to operate over a given area; also, the chances for departures from the average to allow for abnormal variation in the weather could be estimated. For tactical purposes, forecasts could inform a commander concerning the trafficability of proposed routes, could indicate the minimum period after given amounts of rainfall that certain areas would be passable, and might point out trafficability hazards on apparently operable terrain. One of the principal uses of prediction would be to assist in locating main and alternate supply routes over which cargo vehicles could move to the support of ground troops or other installations if the enemy is in a position to deny use of improved roads.

### Previous Developments

4. The early studies of soil trafficability showed that the strength of the soil layer 6 to 12 in. below the surface is of major importance to vehicle mobility. As the strength of a soil varies primarily with soil moisture, a means of predicting soil-moisture content is essential to any method of forecasting soil trafficability. The first four reports of this series, listed inside the front cover of this report, outline the development of a soil-moisture prediction method using certain known data concerning the area involved. Criteria for a satisfactory method were that it: (a) apply specifically to the 6- to 12-in. soil layer;\* (b) be simple

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\* The terms "depth" and "layer" are used interchangeably in this report.



enough to permit its use by nontechnical personnel; and (c) be based on data readily available or easily obtainable in the field.

5. Such a method was developed and tested. First, data were obtained and analyzed from 59 sites, and the prediction method was tested as the data were accumulated. The method and data analysis are described in Report 3 of this series. Results showed that the method was applicable in all cases tested, although the prediction relations such as the depletion (drying) curves varied among sites because of differences in physical properties of soils. The prediction method was then considered ready for testing on a wider range of climates and soils.

6. In the studies of a wider range of soils and climates, detail data were obtained for a total of 131 prediction development sites located in 17 states and Alaska and specific prediction relations were developed for each. Results of this work are summarized in Report 4 of this series. It was found that soil-moisture accretion and depletion relations derived from the detail data collected at the prediction development sites permitted accurate prediction of soil-moisture content at those sites. However, the method could be utilized only if sufficient data were available to describe the moisture regime of the site for which the prediction was made.

#### This Investigation

7. The next step in the soil-moisture prediction study was to develop a means for predicting soil moisture at sites for which specific accretion and depletion relations were not available. This entailed correlation of the relations developed for the prediction development sites with factors such as soil texture and seasons of the year. Earlier effort at correlation (discussed in Report 3) were strengthened by the additional information gathered at the prediction development sites, and a set of tentative average relations (described in this report) was developed for predicting moisture content of certain soils for which specific accretion and depletion relations had not been derived.

8. The accuracy of these tentative average relations was tested by applying them to 24 of the prediction development sites used in the



derivation of the average relations, and to 10 sites that had been established in cooperation with several universities, called "trafficability-university sites," in the early years of the prediction study.

9. The accuracy and utility of the relations for predicting moisture on a diversity of soils and environmental conditions were tested by applying the relations to a number of sites for which detailed soil-moisture records had not been collected, and for which rainfall records from nearby U. S. Weather Stations had to be used. Over 600 such sites, called survey sites, were established in the summer of 1954 and their soil characteristics determined. The sites were located in four general regions designated by the U. S. Forest Service as: (1) the southern, covering portions of Arkansas, Tennessee, Louisiana, Mississippi, Alabama, Georgia, and Florida; (2) the northeastern, covering Pennsylvania, New York, Vermont, New Hampshire, Massachusetts, and Connecticut; (3) the lake states, Wisconsin, Minnesota, Iowa, and Illinois; and (4) the intermountain, covering Utah, Idaho, and Nevada. The sites were visited periodically for a year to obtain measurements of soil strength and moisture content.

#### Purpose and Scope of This Report

10. The purposes of this report are to:

- a. Describe the development of the tentative average relations among the physical properties of soils and topographic and climatic features found to be useful in predicting soil moisture at sites for which specific soil-moisture accretion and depletion relations are not known.
- b. Discuss the procedures used and the accuracy obtained when the tentative average relations were applied to prediction development sites which had been used to develop the method and for which detailed soil and climatic data were available, as well as when applied to the survey sites and trafficability-university sites for which detailed soil-moisture data were not available.
- c. Present the conclusions derived from this investigation and outline future work needed to improve the accuracy of soil-moisture prediction.

11. This report also includes six appendices. Appendix A describes a sample application of the tentative average relations to a specific site. This appendix includes all information necessary for such an



application and thus constitutes the present soil-moisture prediction method. Appendix B describes the survey sites used in this investigation and lists the hydrologic condition and trafficability data obtained. Appendices C, D, E, and F present results of special studies designed to improve the accuracy of soil-moisture prediction. Appendix C gives some observations of runoff with Class I accretion. Appendix D presents results of a soil-moisture variation study on eight sites located in six states. Appendix E summarizes the study of solar radiation and other meteorological factors as related to soil-moisture depletion loss. Appendix F describes a study of cultivation and soil properties that affect trafficability on one site.

### Definitions

12. The following definitions of the specialized terms used in this report include principally those that were not defined in Report 4 of this series, and those that have been revised since Report 4 was published. Standard texts and glossaries on soil physics and soil mechanics were used insofar as possible; however, modifications or new terms were sometimes necessary to describe the work accurately. Also definitions sometimes vary between authorities, in which case the definition most nearly fitting this work was selected. The list is divided into three parts: general terms used in a number of scientific fields, soil-moisture prediction terms used in the method presented in this report, and trafficability terms. Terms that are used primarily in engineering are followed by (E); those used in soil science and other biological sciences by (S).

#### General terms

Bulk density (S). The dry weight of soil per unit volume ( $\text{g per cm}^3$ ) including voids and interstices between particles. The volume of the soil sample is measured in its field condition, whereas its weight is measured after it has been dried to a constant weight at 105 C (usually 24 hours is required for 300-g samples). Bulk density is synonymous with unit weight (dry). Multiplied by 62.4, it is equal to the dry unit weight in pounds per cubic foot.



Field capacity (S). The amount of water held in a soil with adequate opportunity for drainage after the excess gravitational water has drained away and after the rate of downward movement of water has materially decreased.

Moisture tension (S). Considered to be the force or tension by which water is held to the soil surface or within interstices; it varies inversely with the soil-moisture content. The moisture-tension relation for a particular soil is determined by means of a laboratory device at a sequence of tension or pressure settings. At a given moisture content, the tension is equal to the negative or gage pressure to which free water in the instrument has been subjected in order to be in hydraulic equilibrium, through a permeable wall or membrane, with the water in the soil.

Phenology (S). The science of the relation between climate or weather and periodic biological phenomena such as the beginning of spring growth.

Soil-moisture content per cent by weight (S). The soil-moisture content expressed as a percentage of the weight of water driven off at 105 C to the weight of the remaining dry soil.

Soil-moisture content per cent by volume (S). The soil-moisture content expressed as a percentage of the volume of water driven off at 105 C to the volume of the soil in its natural structure including voids and interstices.

Soil-moisture content in inches (S). An expression of moisture content by volume of soil in its natural structure with units of depth per unit depth (e.g., inches of water per inch of soil). The usual expression in this report is inches of water per 6-in. soil layer. These moisture contents are computed as follows:

$$\begin{array}{l} \text{Moisture content,} \\ \text{in. of water per} \\ \text{6-in. soil layer} \end{array} = \frac{\text{moisture content, \% by wt,} \times \text{bulk density} \times 6}{\text{unit wt of water (1)} \times 100}$$

On the basis of dry unit weight in pounds per cubic foot, the computation is as follows:

$$\begin{array}{l} \text{Moisture content,} \\ \text{in. of water per} \\ \text{6-in. soil layer} \end{array} = \frac{\text{moisture content, \% by wt,} \times \text{dry unit wt} \times 6}{\text{unit wt of water (62.4)} \times 100}$$



Total pore space (S). The total amount of voids (air and water) in a unit volume of soil in its natural structure. It is a measure of the volume of water at saturation. The total pore space in per cent of volume of sample can be computed from the following relation:

$$\text{Total pore space, \% of sample volume} = \left( 1 - \frac{\text{bulk density}}{\text{specific gravity} \times \text{unit wt of water}} \right) \times 100$$

#### Soil-moisture prediction terms

Accretion (S). Moisture gain within a soil layer. The moisture gain is caused primarily by precipitation. Lateral flow and a rise in water table may directly contribute to accretion at some sites; however, these sources are usually related to precipitation.

Accretion classes (S). Accretion is divided into two classes, I and II, depending on whether rainfall is less or more, respectively, than the available storage in the surface to 12-in. layer of the soil.

Accretion regression (S). A linear regression computed for each 6-in. soil layer and accretion class, by which accretion is related either to rainfall or available storage depending on the accretion class.

Average moisture-prediction relations (S). Relations obtained by averaging the data from a large number of soil-environmental conditions and applied in the prediction method.

Available storage (S). The difference between the amount of water in a soil layer at the field-maximum moisture content and the amount of water in the layer at any given time. Available storage is expressed on a volume basis (in. per 6-in. layer in this report).

Depletion (S). Moisture loss from a given soil layer. The moisture loss is caused by evapotranspiration and drainage.

Depletion curve (S). The curve of soil-moisture content against time for a period of no accretion. Curves are determined for a given site by soil layers and seasons.

Field-maximum moisture content (S). The recurring maximum moisture content of a soil layer in its natural position. This value, the highest point on the depletion curve, represents maximum wetting during the wet season of the period of daily record, usually one year.

Field-minimum moisture content (S). The lowest value of each depletion curve, representing the lowest average moisture level that occurs



during the dry season of the period of record, usually one year.

Minimum-size storm (S). The smallest storm used in moisture prediction for a particular soil-vegetation condition. Smaller storms do not appreciably wet the soil and depletion occurs.

Prediction development sites (S). Sites on which detailed measurements were taken daily, and from which specific accretion and depletion relations were derived.

Specific moisture-prediction relations (S). Relations derived from and applied in the prediction method to a specific site. Prediction relations include accretion and depletion curves, field-maximum and -minimum moisture contents, transition dates, and minimum-size storm.

Soil-moisture prediction method (S). The method used by WES to predict soil-moisture content. Described in detail in Appendix A. Average or specific prediction relations can be employed in the method.

Survey sites (S). Sites established in four regions of the United States to broaden the knowledge of soil strength-moisture relations, and to verify the applicability of the tentative average moisture-prediction relations. Monthly measurements were made.

Tentative average moisture-prediction relations (S). Tentative sets of relations and equations averaged from specific prediction relations and used in general predictions of soil moisture.

Trafficability-university sites (E). Sites established at several universities to extend knowledge of soil strength-moisture relations. Soil measurements were made at weekly intervals.

Transition date (S). A date at which the average depletion rate exhibits a distinct change as shown in the plot of the daily soil-moisture record. Four dates were found that corresponded to but did not coincide with the calendar changes of season.

Transition periods (S). The seasonal periods of the year in which the depletion rate is intermediate between the summer and winter rates. Spring and autumn showed similar depletion rates, and were grouped together to determine the transition depletion curve.

Wetness index (S). A numerical index expressing the effect of environmental conditions upon the maximum moisture content in the surface to 12-in. layer of soil. The degree of wetting is determined by the depth to



a perched or permanent water table, and the depth of penetration of water from precipitation. (See paragraph 21 for details.)

#### Trafficability terms

Soil strength (E). The resistance of a soil to an applied stress. The strength varies with moisture content and the nature, arrangement, and size distribution of the soil particles, and the test itself. The principal unit of strength used in trafficability studies is cone index.

Cone index (E). An index of the shearing resistance of soil obtained with the cone penetrometer. The value is a dimensionless number representing the resistance to penetration into the soil of a 30-deg cone of 0.5-sq-in. base or projected area. The number, although considered dimensionless, is actually pounds of force on the handle divided by area of the cone base in square inches.

Remolding index (E). A ratio expressing the proportion of original strength that will be retained by a soil after being subjected to a remolding test. A remolding index less than 1.00 indicates strength loss; a remolding index greater than 1.00 indicates a strength gain.

Rating cone index (E). The product of the measured cone index and the remolding index for the same layer of soil. Rating cone index represents the strength of the remolded soil.

Cone penetrometer (E). A field instrument consisting of a shaft with a 30-deg, right circular cone of 1/2-sq-in. base area mounted on one end, and a proving ring with dial gage and handle mounted on the other.

Trafficability sampler (E). A piston-type sampler for securing soft soil samples. Spacer bars permit cutting of the sample to such a length that the density of the soil in pounds per cubic foot may be obtained by multiplying the weight of the sample in grams by 0.4.

Remolding equipment (E). A cylinder of the same diameter as the trafficability sampler cylinder mounted vertically on a base, and a 2-1/2-lb drop hammer which travels 12 in. on an 18-in. section of a cone penetrometer staff fitted with a circular foot. A cone penetrometer, equipped with a 1/2-sq-in. base area cone, and a trafficability sampler are needed to conduct tests.

100-blow remolding test (E). The remolding test is conducted in the following manner: A sample is taken with the trafficability sampler,



loaded into the remolding cylinder, and pushed to the bottom with the drop-hammer foot. Cone indexes are measured at the surface and at 1-in. intervals to a depth of 4 in. Next, 100 blows of the hammer are applied and cone indexes are remeasured in the remolded soil. The quotient obtained by dividing the sum of the five cone index readings made after remolding by the sum of five readings made before remolding is termed the remolding index.

Vibrated remolding test (E). This remolding test is conducted in the same manner as the 100-blow test, with two exceptions. The cone index measurements are made with the 0.2-sq-in. cone instead of the 0.5-sq-in. cone, and the sample is remolded by dropping the remolding cylinder and base with the sample inside 25 times from a height of 6 in.



## PART II: DEVELOPMENT OF TENTATIVE AVERAGE MOISTURE- PREDICTION RELATIONS

13. As stated earlier, prediction relations discussed in previous reports applied only to the sites from which the relations were derived, and in order to make predictions for areas without detailed moisture records, suitable average wetting-and-drying relations were necessary for various kinds of soil, climate, vegetation, and topographic and geographic positions. With soil and site characteristics known, soil moisture can be predicted by means of these average wetting-and-drying relations. The ultimate goal is dependable prediction of soil-moisture content, within known limits of error, without immediate physical contact with the soil, and correlation of these predictions with soil strength.

14. Studies were started in 1953 at 30 sites to determine the soil and site factors that correlate with the moisture-prediction relations. Results of these studies were given in Report 3 of this series. These studies were continued as data from more sites were obtained. The studies were not made concurrently for all prediction relations; hence, the studies in which equations were derived for estimating field-maximum and -minimum moisture contents did not involve as many sites as later studies of depletion and accretion relations.

15. At the end of 1954 it was decided to gather the various average relations and equations together as a unit for testing the utility of the moisture-prediction method on sites with limited data. The development and testing of this set of average relations is the subject of this report. The averages were considered tentative because data were still being obtained from various prediction development sites--hence, specific relations for these sites were yet to be derived--and because more rigorous correlation studies were planned following completion of these site studies.

16. All relations needed for an average set were not necessarily derived for each site, because conditions during the period of measurement did not always encompass the range of possibilities required. For example, the dry western sites had few or no large storms needed to produce Class II accretions, hence no Class II accretion relations could be derived for these sites. With some northern and high altitude sites, frost and snow



prohibited data collection during winter, and no winter depletion curves could be derived. Some of the eastern sites that suffered prolonged drought, and dry western sites did not have data for wet conditions during summer. Fragmentary depletion curves were derived and successfully used for testing during the period of record at the site. These curves, however, could not be reliably extrapolated to the field-maximum moisture content for use in correlation studies. Some maximum moisture contents were measured from artificially wetted plots; others were established from a single peak of the soil-moisture record. Such data were not considered reliable for the field-maximum moisture content correlations. Because of these unavoidable skips in the data, and because for later correlation studies data were available from more sites, the number of sites used to derive an average varies considerably among the prediction relations.

17. It was also recognized that the soil and environmental conditions covered by the usable data of the prediction development sites included only a small portion of the possible combination of conditions existing throughout the United States. Any broad application of the tentative average relations would entail considerable extrapolation. Two instances will emphasize this; application was made to 160 sites in the lake states region covering portions of four states, but only nine prediction development sites were situated in this region and these were within a radius of three miles at one location in northern Wisconsin; application was also made to 135 sites in the northeastern region and no prediction development sites were located there. In spite of the sparsity of the data, the derivation and application of an interim set of average relations were considered worthwhile because such a set would serve three purposes:

- a. It would show the possibilities of a general moisture-prediction system, and if found sufficiently accurate, the system could be used immediately, if needed, pending a subsequent improved set of average relations.
- b. It would point out conditions not covered by the prediction development sites needing further measurement and study to improve accuracy of the prediction system.
- c. It might show that the average prediction relations could be adjusted and modified to fit requirements of specific regions or conditions to improve prediction accuracy without further measurement.



18. In order to make a moisture prediction,\* the following factors are needed: (1) field-maximum moisture content, (2) field-minimum moisture content, (3) smallest size storm that appreciably wets the soil, (4) soil-moisture accretion relations, (5) seasonal soil-moisture depletion curves, and (6) transition dates separating the seasons. A description of the development of averages for these prediction relations follows.

#### Approximation of the Field-maximum Moisture Content

19. The field-maximum moisture content\*\* indicates the maximum in the range of naturally occurring soil-moisture contents. It establishes the wet end of moisture-depletion curves, and is used in the determination of amount of storage space available for absorbing water. The field-maximum values for a given soil layer can be obtained by selecting the recurring peak values from daily soil-moisture records. Usually a period of one year is needed to obtain sound values of recurrent maximum wetting of the profile. In arid regions or in drought cycles, longer periods may be necessary. If detailed records are not available, an approximation of the field maximum must be made to accomplish soil-moisture prediction. Development of this approximation is described in the following paragraphs.

#### Factors considered for use in determining field-maximum moisture

20. As the field maximum is the maximum moisture content of the soil in its natural position, the value depends not only on soil properties such as texture but also upon topographic and profile characteristics that influence the wetting or draining of the soil. For instance, the small amount of water held in a well-drained sand would be greatly increased in a low-lying site if the sand was wet by a water table. The six factors thought to have the greatest influence on the field-maximum moisture content of a soil were evaluated to select those that would give the best

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\* C. A. Carlson, K. G. Reinhart, and J. S. Horton, "Predicting moisture in the surface foot of soil," Proceedings, Soil Science Society of America, vol 20, No. 3 (July 1956), pp 412-415.

\*\* C. A. Carlson and R. S. Pierce, "The field maximum moisture content," Proceedings, Soil Science Society of America, vol 19, No. 1 (January 1955), pp 81-83.



estimate of the field maximum. These were: (1) wetness index, (2) sand content, (3) clay content, (4) percentage of organic matter, (5) bulk density, and (6) 0.06-atm tension value. These factors are discussed in the following paragraphs.

21. The wetness index was devised to evaluate the influence of site characteristics on the potential maximum moisture content of the soil and is described in table 1. The wetness index indicates the distance between

Table 1  
Classification of Sites by Wetness Index

| Wetness Index | Potential Wetness | Depth to Water Table | Depth of Wetting | General Characteristics of Sites*   |
|---------------|-------------------|----------------------|------------------|---|
| 0             | Arid              | Indeterminable       | Less than 1 ft   | Located in desert regions   |
| 1             | Dry               | Indeterminable       | 1-4 ft           | Steeply sloping, denuded, or severely eroded and gullied. Mostly semiarid to arid regions   |
| 2             | Average           | More than 4 ft       | More than 4 ft   | Well-drained soil with no restricted layers or pans; fair to good internal and external drainage. Slope may be flat to steep  |
| 3             | Wet               | 1-4 ft               | To water table   | Soil not well drained. Restricted layers or deep pans may be present. May occur at base of slopes, on terraces, upland flats, or bottomlands  |
| 4             | Saturated         | Less than 1 ft       | To water table   | Sites waterlogged or flooded at least part of year. Bottomlands subject to frequent overflow. Upland flats with poor internal drainage or shallow pans. Slopes with very poor internal drainage |

\* For use in classification when water table and wetting depths are not measured.

the surface of the soil and the maximum height of the water table as measured in a well or auger hole at the site. To be significant, this



water-table height had to be maintained for at least one day during the year or period of record used in the soil-moisture prediction studies. On dry sites, where moisture does not usually penetrate the entire profile, the depth of wetting was also considered.

22. Sand and clay content were selected as factors best characterizing the soil texture as related to water retention. Percentage of organic matter was used because it influences the retention of water in several ways: through its effect upon distribution of large pores, its direct absorption and retention of water, and its influence on aggregation and soil structure. Bulk density and the 0.06-atm tension values are an index of soil structure; however, these last factors are also influenced by texture and organic matter.

#### Evaluation of the factors

23. Data from 39 prediction development sites were used in the evaluation of the six factors. The mean field maxima of the 39 sites were 2.46 in. and 2.28 in. for the surface to 6-in. and 6- to 12-in. layers, respectively. The values ranged from 1.50 in. to 3.28 in. for the surface to 6-in. layer, and from 1.21 in. to 3.38 in. for the 6- to 12-in. layer.

24. The six factors were plotted individually against the field-maximum moisture contents of each of the two soil layers. No significant relations were shown except for the 0.06-atm tension values. When expressed as linear regressions these relations were good, with 73% and 63% of the variation in the field-maximum values associated with the 0.06-atm tension values in the surface to 6-in. and 6- to 12-in. layers, respectively. Thus, the 0.06-atm tension value, determined from cores, is a good first approximation of the field-maximum moisture content of a soil layer. Though this tension value appears to integrate the combined influences of the properties of soil materials on the retention of water in a soil layer, it does not include the effects of topography and the soil profile.

25. Even though the five other factors did not individually show good relations to the field maximum, they do affect pore-size distribution and water retention, so a multiple regression analysis was made to determine their effects simultaneously, following the methods of Ezekiel.\* Of

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\* M. Ezekiel, Methods of Correlation Analysis, 2d ed (New York, John Wiley and Sons, Inc., 1941).



the six variables, bulk density was found to have the least relation to the field-maximum values, and it was dropped as a factor after the first multiple analysis. The other factors influenced the estimation of the maximum in varying degrees. The 0.06-atm tension value had the greatest influence, with sand content next, followed by the wetness index. Organic matter and clay content had lesser effects; the organic matter content was important for the surface to 6-in. layer only, whereas the clay content was important in the 6- to 12-in. layer. As would be expected, the layers in which these two factors are more important are also the layers containing the higher amounts of these constituents.

26. Equations that included the 0.06-atm tension values gave the best estimates of the field maximum. However, tension values must be determined on soil cores in the laboratory\* and, unfortunately, few laboratories do this analysis and published data are limited. Hence, equations were also derived without the tension values. Texture and organic matter are more widely determined and more published results are available. These latter can also be estimated in the field by the appearance and "feel" of the soil. Equations without the tension values, therefore, may be more widely used, even though they are less accurate. The equations developed for use in soil-moisture prediction are as follows:

Without 0.06-atm tension values:

Field-maximum moisture content, in.

$$\text{Surface to 6-in. layer} = +2.06 - 0.011 S + 0.116 OM + 0.151 WI \quad (1)$$

Field-maximum moisture content, in.

$$6\text{- to }12\text{-in. layer} = +2.06 - 0.012 S + 0.008 C + 0.155 WI \quad (2)$$

With 0.06-atm tension values:

Field-maximum moisture content, in.

$$\text{Surface to 6-in. layer} = -0.31 + 1.042 T \quad (3)$$

Field-maximum moisture content, in.

$$\text{Surface to 6-in. layer} = +0.68 - 0.006 S + 0.077 WI + 0.737 T \quad (4)$$

Field-maximum moisture content, in.

$$6\text{- to }12\text{-in. layer} = +0.20 + 0.897 T \quad (5)$$

Field-maximum moisture content, in.

$$6\text{- to }12\text{-in. layer} = +0.83 - 0.006 S + 0.007 C + 0.134 WI + 0.492 T \quad (6)$$

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\* R. W. Leamer and B. Shaw, "A simple apparatus for measuring noncapillary porosity on an extensive scale," Journal, American Society of Agronomy, vol 33 (1941), p 1003.



where:

S = sand, %

C = clay, %

OM = organic matter, %

WI = wetness index

T = moisture content, in. per 6 in. of soil, at 0.06-atm tension.

27. Equation 1, for the surface to 6-in. layer, derived without including 0.06-atm tension values, accounted for 69% of the variation in the field-maximum values; equation 4, with tension values, accounted for 81%. For the 6- to 12-in. layer, 63% of the variation is explained by equation 2, without tension values, whereas 79% is explained by equation 6 when tension is included. The maximum values vary inversely with sand content, and directly with the other factors.

28. The equations express a linear relation between the field maximum and the factors. Using a method of successive approximations by Ezekiel,\* tests were made for nonlinear trends among the factors, but none were found.

#### Approximation of the Field-minimum Moisture Content

29. The field-minimum moisture content usually corresponds to the wilting point of the soil and is approximated by the 15-atm moisture tension value. In some cases, particularly in the surface layer of clay soils, evaporation may reduce the field-minimum moisture content below the wilting point. If detailed records are not available, the field minimum must be estimated because it is necessary for the establishment of the dry end of the depletion curve.

30. The minimum moisture content is governed by the soil properties that determine water retention under the high stress or tension associated with wilting. Equations were derived from data of 59 prediction development sites relating likely factors to the field-minimum values. These factors include texture, organic matter, and wetness index. Inclusion of the 15-atm soil-moisture tension values, which are generally accepted as an

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\* Op. cit.



index of wilting point, would probably have been desirable, but these values were not obtained for the survey sites and are rarely available from other studies. Initial analyses showed that the sand content was not appreciably related to the minimum values, and it was not considered further. The equations finally selected for use in prediction are as follows:

Field-minimum moisture content, in.

$$\text{Surface to 6-in. layer} = -0.013 + 0.007 C + 0.074 OM + 0.149 WI$$

Field-minimum moisture content, in.

$$\text{6- to 12-in. layer} = +0.131 + 0.017 C + 0.044 OM + 0.119 WI$$

where

C = clay, %

OM = organic matter, %

WI = wetness index

31. The factor for organic matter is larger in the surface to 6-in. layer, whereas the clay content factor is larger in the 6- to 12-in. layer. This is the same relation as for the field maximum.

#### Minimum-size Storm

32. The minimum-size storm was determined for 106 of the prediction development sites. At five of these the minimum storm consisted of 0.05 in. of rainfall; at 89 it was 0.10 in.; at 2, 0.15 in.; and at 10 it consisted of 0.20 in. or more. The sites with the 0.05-in. minimum storm were mostly bare, whereas those with a minimum greater than 0.15 in. were mostly forested. This increase in the minimum effective storm size is to be expected with the increase in density of vegetation. However, 84% of the sites, including 16 bare and 31 forested, had minimum-size storms of 0.10 in. Consequently, 0.10 in. was selected as the minimum-size storm for the tentative average relations regardless of vegetative cover, though a smaller or larger minimum storm can be used if conditions of cover warrant. Storms smaller than the minimum were not used in the derivation of accretion regressions nor in making predictions.

#### Accretion Relations

33. In the early development of the prediction method, wetting of



the soil was found to depend primarily upon the amount of rainfall and amount of storage space available in the soil for absorbing water. Rainfall was determined to be the critical variable when total rain for the storm was less than the available storage space for moisture in the surface to 12-in. layer. Moisture gains (accretion) under such conditions were called Class I accretions. The condition of total rainfall exceeding storage space was termed Class II accretion, and in this class, the amount of water falling on the soil was not nearly so important to accretion as the amount of available pore space.

34. Accretion relations were derived for the surface to 6-in. and 6- to 12-in. layers on every prediction development site by computing regressions of rainfall against accretion (Class I) and available storage against accretion (Class II). Soil-moisture gain was determined for each storm during the period of record by subtracting the moisture content before the storm from that after the storm. Available storage was determined by subtracting the moisture content before the storm from the field maximum.

35. In order to check the early findings concerning the relative importance of rainfall and storage, a multiple regression analysis was made in 1955 for Class I accretions in the surface to 6-in. layer, using an aggregation of 591 individual storms exceeding 0.25 in. in size that occurred on 30 sites. Seven independent variables were used: precipitation and available storage varied with storms, and percentage of sand, percentage of clay, storage capacity, amount of vegetation, and wetness index varied with sites.

36. Sixty per cent of the variation in accretion was accounted for by these variables. Rainfall alone explained 55% of the variation. Hence, rainfall is the dominant factor influencing Class I accretion regardless of site differences when analyzed with many factors simultaneously. For specifically derived regressions of the prediction development sites, rainfall as a single independent factor, on the average, accounts for 86% of variation in Class I accretion amounts in the surface to 6-in. layer, ranging from 55% to 95% for individual sites.

37. Another multiple regression was computed using Class I accretions from storms of only one size, 0.50 to 0.60 in., thus omitting amount of rainfall as a factor but retaining the other six factors. Available



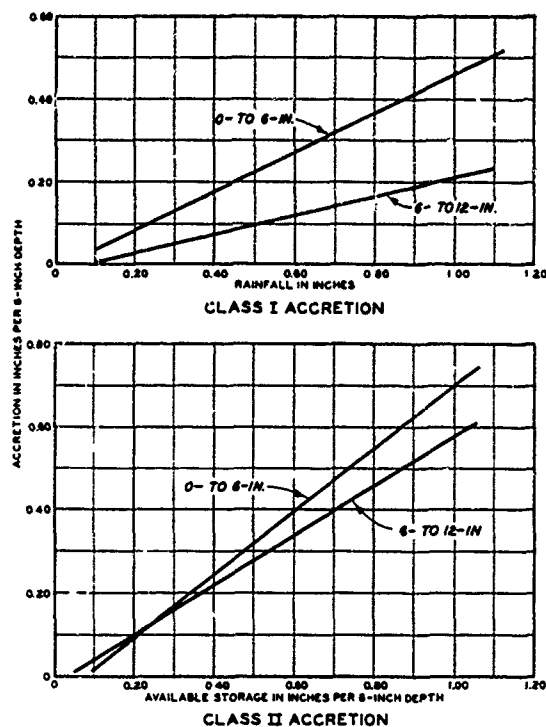


Fig. 1. Class I and Class II tentative average accretion relations, surface to 6-in. and 6- to 12-in. layers

sites and 380 Class II accretions from 54 sites shown in fig. 1.

|          | <u>Surface to 6-in. Layer</u> | <u>6- to 12-in. Layer</u> |
|----------|-------------------------------|---------------------------|
| Class I  | $\hat{Y} = 0.47X - 0.01$      | $\hat{Y} = 0.22X - 0.01$  |
| Class II | $\hat{Y} = 0.75Z - 0.05$      | $\hat{Y} = 0.60Z - 0.02$  |

where

$\hat{Y}$  = predicted accretion, in. per 6-in. layer

$X$  = rainfall, in.

$Z$  = available storage at the start of the storm, in. per 6-in. layer.

#### Depletion Relations

39. In early studies of soil-moisture losses discussed in Report 3, comparisons among sites were made by observing general shapes of the drying curves, by determining losses for different segments, and from daily rates of loss. Three distinctive segments of the soil-moisture depletion curve

storage accounted for 23% of the variation in accretion; the other factors contributed very little. Thus, variation in available storage is a secondary factor influencing Class I accretion, but not nearly so important as rainfall.

38. In view of these studies it was concluded that use of only the rainfall and available storage factors would suffice for the development of the accretion relations. It also appeared that a single set of four accretion regressions (Class I and II accretions for each layer) could be used for all sites. Average regressions were, therefore, computed using 1700 Class I accretions from 75



could be noted for some sites: first, where depletion rates included water lost by gravity flow; second, where rates from evapotranspiration losses alone were uniform under conditions of plentiful available water; and third, where rates from evapotranspiration losses were reduced at low soil-moisture contents. Differences in rate of water loss were noted between sites but, because of limited data, site characteristics could not be related statistically to these differences. Differences between seasons were quite distinctive, though early studies indicated that spring and autumn losses were too similar to justify separation. This spring-autumn period was called the transition period.

40. Later another study was made using more data to derive average depletion curves for use in predictions at sites with no detailed data. Because texture was found to be a major factor in the maximum and minimum estimations, and because texture influences drainage and availability of water, the curves of 48 of the prediction development sites were grouped at the start into three textural groups: sand, silt, and clay.

41. Using the U. S. Department of Agriculture soil classes, sand soils include the sands, sandy loams, and loams; silt soils include the silt loams and silts; and clay soils include all those with clay in their USDA textural class name, such as sandy clay loam or silty clay. Under the Unified Soil Classification System, sand soils include SM soils primarily and some SC, ML, and MH soils; silt soils are chiefly ML and MH soils but some CL soils are included; and the clay group includes the CH, CL, and SC classes mostly.

42. Amounts of water loss at the prediction development sites were tabulated by 5-day intervals for the first 20 days and by 10-day intervals thereafter. The average moisture loss by each textural group for each time interval was determined for each depletion season (summer, transition, and winter) for the two 6-in. layers, and 18 moisture loss curves were constructed as shown in figs. 2 and 3. These curves were derived from relatively few sites. Only three clays were in the surface to 6-in. layer and eight clays in the 6- to 12-in. layer. Most of these clays were found in the south in pine-covered areas, which may explain their high rates of loss in the transition and winter seasons as compared to the other soils. The accumulative daily moisture loss for the three textural groups and



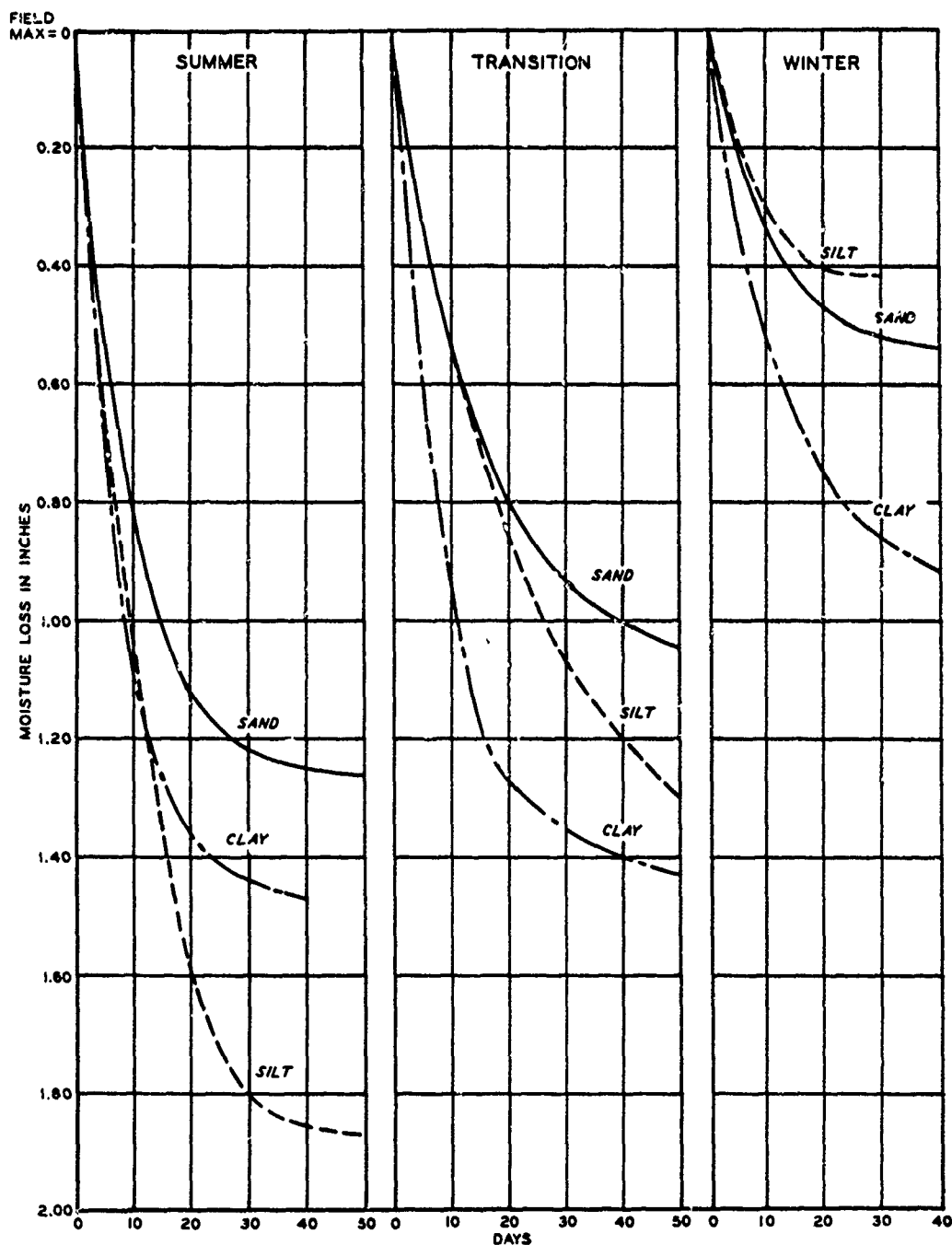


Fig. 2. Curves showing average moisture loss from field maximum, by seasons and textural groups, in surface to 6-in. layer

depletion seasons is given in tables 2 and 3 for the two 6-in. layers.

43. Subaveraging of the textural depletion curves was tried with the site wetness index considered. Wetness index is important in relation to depletion because it differentiates high water table sites from others, and



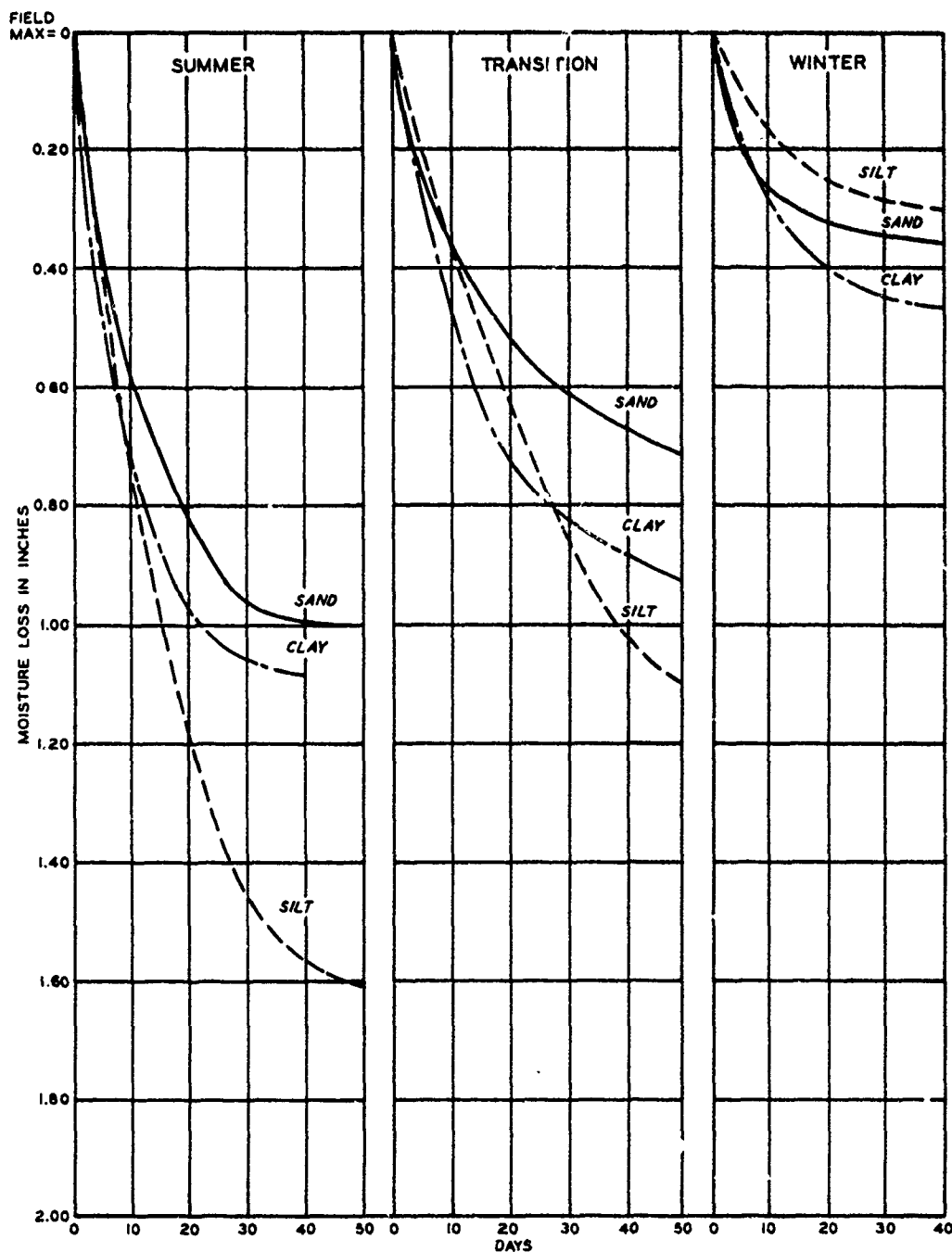


Fig. 3. Curves showing average moisture loss from field maximum, by seasons and textural groups, in 6- to 12-in. layer

thereby separates those with poor drainage and reduced depletion rates. However, the use of textural-wetness categories was abandoned when it was found that no sites were represented in several of the categories. Sparsity of data also precluded averaging by climate or locality. Although



depletion is presently broken down only by soil layer, season, and texture, the importance of drainage, climate, and other factors is recognized and

Table 2  
Accumulative Daily Moisture Loss from Field Maximum  
Surface to 6-in. Layer

| Days | Moisture Loss, in. |       |        |        |       |        |        |       |        |
|------|--------------------|-------|--------|--------|-------|--------|--------|-------|--------|
|      | Sand               |       |        | Silt   |       |        | Clay   |       |        |
|      | Summer             | Trans | Winter | Summer | Trans | Winter | Summer | Trans | Winter |
| 1    | 0.15               | 0.09  | 0.05   | 0.15   | 0.09  | 0.05   | 0.17   | 0.13  | 0.08   |
| 2    | 0.30               | 0.17  | 0.10   | 0.29   | 0.17  | 0.09   | 0.33   | 0.26  | 0.16   |
| 3    | 0.39               | 0.23  | 0.14   | 0.40   | 0.22  | 0.12   | 0.46   | 0.37  | 0.22   |
| 4    | 0.48               | 0.28  | 0.18   | 0.51   | 0.27  | 0.15   | 0.59   | 0.48  | 0.28   |
| 5    | 0.56               | 0.33  | 0.22   | 0.61   | 0.32  | 0.18   | 0.71   | 0.59  | 0.33   |
| 6    | 0.62               | 0.37  | 0.25   | 0.69   | 0.37  | 0.21   | 0.79   | 0.67  | 0.37   |
| 7    | 0.68               | 0.41  | 0.28   | 0.77   | 0.41  | 0.24   | 0.87   | 0.74  | 0.41   |
| 8    | 0.73               | 0.45  | 0.30   | 0.85   | 0.45  | 0.27   | 0.95   | 0.81  | 0.45   |
| 9    | 0.78               | 0.49  | 0.32   | 0.92   | 0.48  | 0.29   | 1.03   | 0.88  | 0.49   |
| 10   | 0.83               | 0.52  | 0.34   | 1.00   | 0.52  | 0.31   | 1.10   | 0.95  | 0.52   |
| 11   | 0.87               | 0.56  | 0.36   | 1.08   | 0.55  | 0.33   | 1.14   | 1.00  | 0.55   |
| 12   | 0.91               | 0.59  | 0.38   | 1.16   | 0.59  | 0.34   | 1.18   | 1.04  | 0.58   |
| 13   | 0.95               | 0.62  | 0.40   | 1.23   | 0.62  | 0.35   | 1.22   | 1.10  | 0.61   |
| 14   | 0.98               | 0.65  | 0.41   | 1.30   | 0.66  | 0.36   | 1.26   | 1.15  | 0.64   |
| 15   | 1.01               | 0.68  | 0.43   | 1.37   | 0.69  | 0.37   | 1.29   | 1.19  | 0.66   |
| 16   | 1.04               | 0.71  | 0.44   | 1.43   | 0.73  | 0.38   | 1.31   | 1.22  | 0.68   |
| 17   | 1.07               | 0.73  | 0.45   | 1.48   | 0.76  | 0.39   | 1.33   | 1.24  | 0.70   |
| 18   | 1.09               | 0.75  | 0.46   | 1.53   | 0.80  | 0.40   | 1.34   | 1.25  | 0.72   |
| 19   | 1.11               | 0.77  | 0.47   | 1.57   | 0.83  | 0.41   | 1.35   | 1.26  | 0.74   |
| 20   | 1.13               | 0.79  | 0.48   | 1.61   | 0.85  | 0.41   | 1.36   | 1.27  | 0.75   |
| 21   | 1.14               | 0.81  | 0.48   | 1.64   | 0.88  | 0.41   | 1.37   | 1.28  | 0.77   |
| 22   | 1.15               | 0.83  | 0.49   | 1.66   | 0.90  | 0.41   | 1.38   | 1.29  | 0.78   |
| 23   | 1.16               | 0.85  | 0.49   | 1.68   | 0.93  | 0.41   | 1.39   | 1.30  | 0.80   |
| 24   | 1.17               | 0.87  | 0.50   | 1.70   | 0.95  | 0.41   | 1.40   | 1.31  | 0.81   |
| 25   | 1.18               | 0.88  | 0.50   | 1.72   | 0.97  | 0.42   | 1.41   | 1.32  | 0.82   |
| 26   | 1.19               | 0.89  | 0.50   | 1.74   | 1.00  | 0.42   | 1.42   | 1.33  | 0.83   |
| 27   | 1.20               | 0.90  | 0.51   | 1.76   | 1.02  | 0.42   | 1.43   | 1.34  | 0.84   |
| 28   | 1.21               | 0.91  | 0.51   | 1.78   | 1.04  | 0.42   | 1.43   | 1.35  | 0.85   |
| 29   | 1.22               | 0.92  | 0.51   | 1.80   | 1.06  | 0.42   | 1.44   | 1.36  | 0.86   |
| 30   | 1.23               | 0.93  | 0.52   | 1.82   | 1.08  | 0.42   | 1.44   | 1.36  | 0.87   |
| 35   | 1.24               | 0.97  | 0.53   | 1.84   | 1.14  |        | 1.46   | 1.38  | 0.90   |
| 40   | 1.25               | 1.01  | 0.54   | 1.86   | 1.20  |        | 1.47   | 1.40  | 0.92   |
| 45   | 1.25               | 1.03  |        | 1.86   | 1.25  |        |        | 1.42  |        |
| 50   | 1.26               | 1.05  |        | 1.87   | 1.30  |        |        | 1.43  |        |

Note: End values represent maximum moisture loss.



Table 3  
Accumulative Daily Moisture Loss from Field Maximum  
6- to 12-in. Layer

| Days | Moisture loss, in. |       |        |        |       |        |        |       |        |
|------|--------------------|-------|--------|--------|-------|--------|--------|-------|--------|
|      | Sand               |       |        | Silt   |       |        | Clay   |       |        |
|      | Summer             | Trans | Winter | Summer | Trans | Winter | Summer | Trans | Winter |
| 1    | 0.12               | 0.07  | 0.06   | 0.11   | 0.05  | 0.03   | 0.14   | 0.08  | 0.05   |
| 2    | 0.24               | 0.14  | 0.11   | 0.21   | 0.09  | 0.05   | 0.27   | 0.15  | 0.10   |
| 3    | 0.29               | 0.18  | 0.14   | 0.28   | 0.13  | 0.07   | 0.34   | 0.19  | 0.13   |
| 4    | 0.34               | 0.22  | 0.17   | 0.35   | 0.16  | 0.09   | 0.40   | 0.23  | 0.16   |
| 5    | 0.38               | 0.25  | 0.20   | 0.41   | 0.19  | 0.11   | 0.46   | 0.27  | 0.19   |
| 6    | 0.42               | 0.28  | 0.22   | 0.47   | 0.22  | 0.13   | 0.52   | 0.31  | 0.21   |
| 7    | 0.46               | 0.30  | 0.24   | 0.53   | 0.25  | 0.14   | 0.58   | 0.35  | 0.23   |
| 8    | 0.50               | 0.32  | 0.25   | 0.59   | 0.28  | 0.15   | 0.63   | 0.38  | 0.25   |
| 9    | 0.54               | 0.34  | 0.26   | 0.65   | 0.31  | 0.16   | 0.69   | 0.43  | 0.27   |
| 10   | 0.57               | 0.36  | 0.27   | 0.71   | 0.34  | 0.17   | 0.74   | 0.47  | 0.29   |
| 11   | 0.60               | 0.38  | 0.28   | 0.76   | 0.37  | 0.18   | 0.77   | 0.50  | 0.31   |
| 12   | 0.63               | 0.40  | 0.29   | 0.81   | 0.40  | 0.19   | 0.80   | 0.53  | 0.33   |
| 13   | 0.66               | 0.42  | 0.29   | 0.86   | 0.43  | 0.20   | 0.83   | 0.56  | 0.34   |
| 14   | 0.69               | 0.44  | 0.30   | 0.91   | 0.46  | 0.21   | 0.86   | 0.59  | 0.35   |
| 15   | 0.72               | 0.45  | 0.30   | 0.96   | 0.48  | 0.22   | 0.89   | 0.62  | 0.36   |
| 16   | 0.74               | 0.47  | 0.31   | 1.01   | 0.51  | 0.23   | 0.91   | 0.64  | 0.37   |
| 17   | 0.76               | 0.49  | 0.31   | 1.06   | 0.54  | 0.24   | 0.93   | 0.66  | 0.38   |
| 18   | 0.78               | 0.50  | 0.32   | 1.11   | 0.56  | 0.24   | 0.95   | 0.68  | 0.39   |
| 19   | 0.80               | 0.51  | 0.32   | 1.15   | 0.59  | 0.25   | 0.97   | 0.70  | 0.40   |
| 20   | 0.82               | 0.52  | 0.33   | 1.19   | 0.61  | 0.25   | 0.98   | 0.72  | 0.40   |
| 21   | 0.84               | 0.53  | 0.33   | 1.22   | 0.64  | 0.26   | 0.99   | 0.74  | 0.41   |
| 22   | 0.86               | 0.54  | 0.33   | 1.25   | 0.66  | 0.26   | 1.00   | 0.75  | 0.41   |
| 23   | 0.88               | 0.55  | 0.33   | 1.28   | 0.69  | 0.27   | 1.01   | 0.76  | 0.42   |
| 24   | 0.90               | 0.56  | 0.33   | 1.31   | 0.71  | 0.27   | 1.02   | 0.77  | 0.42   |
| 25   | 0.92               | 0.57  | 0.34   | 1.34   | 0.74  | 0.28   | 1.03   | 0.78  | 0.43   |
| 26   | 0.93               | 0.58  | 0.34   | 1.37   | 0.76  | 0.28   | 1.04   | 0.79  | 0.43   |
| 27   | 0.94               | 0.59  | 0.34   | 1.40   | 0.79  | 0.28   | 1.04   | 0.80  | 0.44   |
| 28   | 0.95               | 0.60  | 0.34   | 1.42   | 0.81  | 0.29   | 1.05   | 0.81  | 0.44   |
| 29   | 0.96               | 0.61  | 0.34   | 1.44   | 0.83  | 0.29   | 1.05   | 0.82  | 0.45   |
| 30   | 0.97               | 0.62  | 0.34   | 1.46   | 0.85  | 0.29   | 1.06   | 0.83  | 0.45   |
| 35   | 0.98               | 0.65  | 0.35   | 1.52   | 0.95  | 0.30   | 1.07   | 0.86  | 0.46   |
| 40   | 0.99               | 0.68  | 0.35   | 1.57   | 1.03  | 0.30   | 1.08   | 0.89  | 0.46   |
| 45   | 0.99               | 0.70  |        | 1.59   | 1.07  |        |        | 0.91  |        |
| 50   | 1.00               | 0.72  |        | 1.61   | 1.10  |        |        | 0.93  |        |
| 55   |                    |       |        | 1.62   |       |        |        |       |        |
| 60   |                    |       |        | 1.63   |       |        |        |       |        |

Note: End values represent maximum moisture loss.

18676



these will be studied further as additional data become available.

44. The values of moisture loss given in tables 2 and 3 apply to the average of each soil textural group. The values for the summer season had to be adjusted because the difference between field maximum and minimum was not the same in the site being predicted as in the average shown in the tables. Adjustments were made using the ratio of the estimated range between field maximum and minimum divided by the average range of a given textural group. The ratio was multiplied by each value in the summer column of the desired texture and layer shown in table 2 or 3 to give adjusted values of moisture loss from field maximum for summer depletion. For convenience in use, the moisture loss values were converted to soil-moisture contents by subtracting each of the loss values from the field maximum, giving the usual depletion table. The adjustment of summer loss values and conversion to a depletion tabulation are demonstrated in Appendix A.

45. The moisture loss values for the winter and the transition periods given in tables 2 and 3 were used as shown in the computation of depletion. No adjustments were made in them because soil-moisture content during autumn, winter, and spring rarely reaches field minimum. If transition depletion exceeded the adjusted summer values after some days of depletion, summer values were used starting on the day the two moisture contents converged. To facilitate prediction for a particular site, depletion tables for the winter and transition periods were constructed. The field maximum was estimated from the suitable equation in paragraph 26. The moisture loss for each subsequent day for that particular season, soil depth, and soil material shown in tables 2 and 3 was then subtracted from this maximum. It was convenient to build up a set of tables by this process showing moisture depletion for a range of field maxima. A separate tabulation was needed for each of the two depths for the three soil classes, and for the two seasons (winter and transition); consequently, 12 subdivisions of a comprehensive table of average depletion rates were constructed, as shown in Appendix A, table A7.

46. Two assumptions are made in the calculations for the depletion tabulations: first, that the adjustment in rate of summer loss occurs proportionately throughout the curve and, second, that the curves of all



seasons can be shifted up or down to start depletion at the value of the estimated field maximum, without affecting the shape or slope of the curve. In the latter, water loss characteristics are assumed to be constant, although a high maximum may indicate a soil with a larger proportion of big pores which could drain more rapidly than one with an average pore-size distribution.

#### Transition Dates

47. Summer, winter, and transition (spring-autumn) drying curves are generally used in predictions, and transition dates are needed to determine when to shift from one set of depletion curves to another. Since the changes in soil-moisture depletion rates are caused by seasonal variations in weather and vegetation, the dates vary with both latitude and elevation, and may change at the same location from year to year.

48. It was hoped that sufficient data would be obtained from the prediction development sites to derive a system for estimating transition dates. However, records were obtained for a period of but one year at only 22 localities. These localities ranged from the Gulf of Mexico to Alaska, and from sea level to an elevation of 10,000 ft. A satisfactory method for selecting dates applicable to so wide a range of sites and for an average year could not be determined from these data. However, tentative transition dates for the 22 localities were determined from the data collected and are shown in table 4. It will be seen that the start of spring varied from March to early May, of summer from May to July, of autumn from September to the middle of November, and of winter from the end of October to the middle of December. The dates varied with latitude rather as was expected. The effects of elevation changes were not very consistent. The autumn and winter dates were not determined conclusively because soils are generally dry at this time of the year, making changes in rates of depletion difficult to discern.

49. The climates of the Florida gulf coast and California are such that it is impossible to determine spring or autumn transition periods for these areas. In Florida, the changes between winter and summer depletion rates were too small to show distinctive transition periods. In California,



Table 4  
Approximate Seasonal Transition Dates Determined  
from Prediction Development Sites

| Area                         | Latitude<br>deg | Elevation<br>ft | Transition Date (First<br>Day of Season) |        |        |        |
|------------------------------|-----------------|-----------------|--|--------|--------|--------|
|                              |                 |                 | Spring                                   | Summer | Autumn | Winter |
| Alexandria, Louisiana        | 31.0            | 100             | 3/17                                     | 5/24   | --     | --     |
| East Texas                   | 31.6            | 225             | 3/15                                     | 6/1    | 11/18  | 12/1   |
| Vicksburg, Mississippi       | 32.3            | 100-300         | 3/10                                     | 5/10   | 9/22   | 10/24  |
| Crossett, Arkansas           | 33.0            | 175             | 3/9                                      | 5/26   | 10/26  | 12/1   |
| State College, Mississippi   | 33.5            | 424             | 3/15                                     | 6/1    | 11/18  | 12/1   |
| Union, South Carolina        | 34.7            | 500             | 3/10                                     | 4/28   | 9/23   | 11/23  |
| Sandia Mountains, New Mexico | 35.1            | 7,000           | 4/5                                      | 7/1    | 9/18   | --     |
| East Mesa, New Mexico        | 35.2            | 5,200           | --                                       | 7/1    | 9/27   | --     |
| Flood Plain, New Mexico      | 35.2            | 5,000           | 4/5                                      | 5/12   | 9/20   | --     |
| Jemez Dam, New Mexico        | 35.5            | 5,400           | 3/23                                     | 7/19   | 9/21   | --     |
| Poplar Bluff, Missouri       | 36.9            | 520             | 4/16                                     | 6/11   | 10/1   | 12/10  |
| Desert, Colorado             | 38.8            | 5,200           | 3/22                                     | --     | 9/25   | 12/5   |
| Pinon-Juniper, Colorado      | 39.0            | 7,000           | 3/27                                     | --     | 9/16   | 11/26  |
| Oakbrush, Colorado           | 39.0            | 8,500           | --                                       | --     | 9/10   | --     |
| Aspen, Colorado              | 39.0            | 9,200           | --                                       | --     | 9/8    | --     |
| Mesa, Colorado               | 39.0            | 10,200          | --                                       | --     | 9/3    | --     |
| Dilldown, Pennsylvania       | 40.0            | 1,900           | 5/7                                      | 6/12   | 9/15   | 11/10  |
| Rhineland, Wisconsin         | 44.5            | 1,500           | 5/10                                     | 6/3    | 9/11   | --     |
| Fairbanks, Alaska            | 64.9            | 500             | --                                       | 6/4    | 9/15   | --     |
| Glendora, California         | 34.2            | 2,800           | --                                       | 5/1    | --     | 12/1   |
| North Fork, California       | 37.2            | 2,800           | --                                       | 4/10   | --     | 11/11  |
| Bass Lake, California        | 37.3            | 3,400           | --                                       | 5/15   | --     | 12/4   |

the long period of spring-summer dryness obscured changes in depletion rates between winter and summer seasons, hence, the dates for the beginning of summer are not comparable to those of the other localities.

50. For satisfactory predictions, additional data on transition dates were needed. During the periodic visits to the survey sites, the field parties took notes on such items as changes in weather and vegetation, occurrence of frost, bud and leaf development, and coloration and fall of leaves. These observations were used in conjunction with earlier information to select the transition dates for predictions at the survey sites given in table 5.

51. A consistent change in transition dates was shown with increase in latitude. Spring and summer dates were later and autumn and winter



Table 5

Transition Dates Determined for Survey Sites Regions


| Survey Regions | Latitude<br>deg   | Transition Date (First<br>Day of Season)    |   |        |        |       |       |
|----------------|-------------------|---|---|--------|--------|-------|-------|
|                |                   | Spring                                      | Summer                                      | Autumn | Winter |       |       |
| Southern       | 31.5              | 3/10  | 5/10  | 10/15  | 12/1   |       |       |
|                | 34.0              | 3/17  | 5/10  | 10/15  | 12/1   |       |       |
| Lake states    | 41.5              | 4/15  | 5/10  | 10/18  | 11/15  |       |       |
|                | 44.0              | 4/20  | 5/18  | 10/10  | 11/1   |       |       |
|                | 46.5              | 4/30  | 5/25  | 9/22   | 11/1   |       |       |
| Intermountain  | 4500-ft elevation | 38.0  | 4/17  | 5/28   | 9/26   | 11/7  |       |
|                |                   | 41.0  | 4/20  | 6/1    | 9/20   | 11/1  |       |
|                |                   | 43.0  | 4/23  | 6/5    | 9/17   | 10/28 |       |
|                |                   | 46.0  | 5/13  | 6/11   | 9/8    | 10/18 |       |
|                | 7000-ft elevation | 38.0  | 5/14  | 6/12   | 9/10   | 10/20 |       |
|                |                   | 41.0  | 5/14  | 6/10   | 9/12   | 10/25 |       |
|                |                   | 43.0  | 5/14  | 6/10   | 9/10   | 10/20 |       |
|                | Northeastern      |   |   |        |        |       |       |
|                |                   | Pennsylvania, New<br>York, Connect-<br>icut |   | 5/1    | 5/15   | 9/15  | 11/15 |
|                |                   |   | Massachusetts,<br>New Hampshire,<br>Vermont | 5/1    | 5/20   | 9/15  | 11/15 |

dates earlier in the more northern latitudes. One set of dates was usually used for all sites located within a  $2\text{-}1/2^\circ$  band of latitude, or a band about 150 miles wide. In the intermountain region, allowance was made for an increase in elevation as well as latitude. At higher elevations, spring and summer are later, autumn and winter earlier.

52. The greatest difference in times of occurrence of a transition date (about two months) is in the beginning of spring. The other starting dates have a range of about a month. At the 7000-ft elevation in the intermountain region, dates were the same regardless of latitude, and they were all about the same as those at 4500-ft elevation and  $46^\circ$  latitude. Likewise, Fairbanks, Alaska, at  $65^\circ$  latitude and 500-ft elevation, had about the same summer and autumn starting dates, June 4 and September 15, as the



43° latitude intermountain region. Thus, starting dates for the higher latitudes and elevations do not show the ranges that they do in the south. As a consequence, the duration of the summer season is the same at these northern locations. Apparently the cooler seasonal temperatures are compensated by the longer days at the higher latitudes.





### PART III: APPLICATION OF TENTATIVE AVERAGE MOISTURE- PREDICTION RELATIONS

#### General Procedures Used

53. The applicability and reliability of the tentative average moisture-prediction relations were tested over a wide range of conditions by making predictions for a period of about one year on 651 sites located throughout the United States including Alaska. These sites consisted of three groups: 24 of the prediction development sites discussed in Report 4, 10 of the trafficability-university sites discussed in Report 3, and 617 of the survey sites discussed in Appendix B of this report. The first group was used to test the applicability of the tentative average relations on sites from which they had been derived. For the second group, weekly data were available for testing; for the last group, the survey sites, only monthly data were available.

54. The tentative average relations for these predictions were developed as follows. Field-maximum moisture contents were calculated for the prediction development sites and survey sites using equations 4 and 6 in paragraph 26. For the trafficability-university sites, equations 1 and 2 were used because the 0.06-atm tension values were not available. Field-minimum moisture contents of all sites were calculated from the equations in paragraph 30. A minimum-size storm of 0.10 in. was used throughout. The equations for the accretion relations are given in paragraph 38. Transition dates were selected with the dates listed in tables 4 and 5 used as guides. Summer depletion was determined from the average loss values of tables 2 and 3, using adjusted summer depletion. Winter and transition depletions for each site were selected from table A7, Appendix A of this report.

55. In the application of the average relations, the same procedures were followed as were used for the prediction development sites, given in detail in Report 4. A sample application of the average relations to a site without detailed records is described in Appendix A of this report.

56. Although the survey site records began in June 1954 and ended in June 1955, measurements were made throughout the winter only at the



southern survey sites. Hence, predictions were made for the entire period for the southern survey sites but were stopped at the beginning of winter for the other regions because of frozen soil. For the intermountain and lake states survey sites, predictions were started again in the spring, beginning with the first sampling date after frost had left the ground. Predictions for the northeastern survey sites were started when the soil thawed as indicated by the daily temperature record at the nearest weather station; moisture contents at that time were assumed to be at the field maximum.

57. Differences between predicted and measured moisture content were used to indicate accuracy of prediction. Twenty-three to 115 comparisons were available at each prediction development site, 20 to 51 at each trafficability-university site, and 4 to 7 at each survey site. The individual differences were averaged, regardless of sign, to determine the deviation for each site. The average deviations were compared considering differences in soil and site characteristics, and location.

#### Tests on Prediction Development Sites

58. The tentative average moisture prediction relations were applied to 24 prediction development sites having daily records of soil moisture taken with Fiberglas units. Rainfall was recorded continuously at each site. Predictions had already been made using specific relations derived from the data for each site (Report 4). Deviations of these predictions from actual moisture content are shown in the first two columns of table 6. Deviations of predictions made using the tentative average relations from actual moisture content are given in the next two columns. The number of comparisons are the same for the two sets of columns. As the number of comparisons are not the same as used previously when testing specific relations, the deviations may vary from those reported in earlier publications.

59. The deviations of predicted moisture contents using specific relations average 0.13 in. for the surface to 6-in. layer and 0.09 in. for the 6- to 12-in. layer. When the average relations were used the deviation was 0.26 and 0.23 in., respectively, for the two layers. The average



Table 6

Average Deviations, in Inches of Water, Between Measured Moisture Content and That Predicted:  
From Specific and Tentative Average Relations

| Site                         | Specific Relations     |                    | Average Relations      |                    | No. of Comparisons | Wet-ness Index | Texture |
|------------------------------|------------------------|--------------------|------------------------|--------------------|--------------------|----------------|---------|
|                              | Surface to 6-in. Layer | 6- to 12-in. Layer | Surface to 6-in. Layer | 6- to 12-in. Layer |                    |                |         |
| <u>Vicksburg, Miss.</u>      |                        |                    |                        |                    |                    |                |         |
| Park Mound                   | 0.14                   | 0.08               | 0.12                   | 0.12               | 83                 | 2              | Silt    |
|                              | 0.10                   | 0.07               | 0.18                   | 0.27               | 50                 | 4              | Silt    |
| <u>Laurel, Miss.</u>         |                        |                    |                        |                    |                    |                |         |
| Eddins                       | 0.14                   | 0.09               | 0.34                   | 0.27               | 25                 | 4              | Clay    |
| <u>State College, Miss.</u>  |                        |                    |                        |                    |                    |                |         |
| Vaiden                       | 0.24                   | 0.20               | 0.23                   | 0.29               | 78                 | 4              | Clay    |
| <u>Oxford, Miss.</u>         |                        |                    |                        |                    |                    |                |         |
| Providence                   | 0.18                   | 0.12               | 0.26                   | 0.16               | 40                 | 2              | Clay    |
| <u>Crossett, Ark.</u>        |                        |                    |                        |                    |                    |                |         |
| Headquarters, forest         | 0.27                   | 0.10               | 0.24                   | 0.26               | 74                 | 4              | Silt    |
| <u>Marianna, Fla.</u>        |                        |                    |                        |                    |                    |                |         |
| Lakeland                     | 0.09                   | 0.10               | 0.10                   | 0.11               | 80                 | 2              | Sand    |
| <u>Union, S. C.</u>          |                        |                    |                        |                    |                    |                |         |
| Loblolly                     | 0.13                   | 0.09               | 0.30                   | 0.43               | 83                 | 2              | S, C*   |
| <u>Poplar Bluff, Mo.</u>     |                        |                    |                        |                    |                    |                |         |
| Weldon, forest               | 0.07                   | 0.05               | 0.35                   | 0.16               | 64                 | 2              | Silt    |
| <u>Robbs, Ill.</u>           |                        |                    |                        |                    |                    |                |         |
| Grantsburg                   | 0.12                   | 0.13               | 0.33                   | 0.26               | 42                 | 2              | Silt    |
| <u>Rhineland, Wis.</u>       |                        |                    |                        |                    |                    |                |         |
| Sortek, herbaceous           | 0.26                   | 0.19               | 0.36                   | 0.25               | 49                 | 4              | Silt    |
| Timber Lake                  | 0.13                   | 0.04               | 0.17                   | 0.38               | 29                 | 2              | Sand    |
| <u>Miles City, Mont.</u>     |                        |                    |                        |                    |                    |                |         |
| River                        | 0.11                   | 0.11               | 0.20                   | 0.29               | 23                 | 3              | Clay    |
| <u>Priest River, Idaho</u>   |                        |                    |                        |                    |                    |                |         |
| Meadow                       | 0.23                   | 0.20               | 0.37                   | 0.24               | 32                 | 4              | Silt    |
| <u>Rockford, Wash.</u>       |                        |                    |                        |                    |                    |                |         |
| Couse, pine                  | 0.16                   | 0.10               | 0.28                   | 0.28               | 36                 | 3              | Silt    |
| <u>California</u>            |                        |                    |                        |                    |                    |                |         |
| Bass Lake                    | 0.11                   | 0.08               | 0.33                   | 0.22               | 23                 | 2              | S, C*   |
| Tanbark, chaparral           | 0.19                   | 0.10               | 0.13                   | 0.22               | 46                 | 2              | Sand    |
| <u>Grand Junction, Colo.</u> |                        |                    |                        |                    |                    |                |         |
| East Mesa                    | 0.03                   | 0.03               | 0.20                   | 0.18               | 71                 | 2              | Silt    |
| Pinon-Juniper                | 0.03                   | 0.05               | 0.54                   | 0.24               | 89                 | 2              | Sand    |
| <u>Delta, Colo.</u>          |                        |                    |                        |                    |                    |                |         |
| Aspen 2                      | 0.04                   | 0.04               | 0.34                   | 0.13               | 43                 | 2              | Sand    |
| <u>Albuquerque, N. Mex.</u>  |                        |                    |                        |                    |                    |                |         |
| Pine Flat                    | 0.10                   | 0.03               | 0.21                   | 0.19               | 115                | 2              | Silt    |
| <u>Alaska</u>                |                        |                    |                        |                    |                    |                |         |
| Birch Hill                   | 0.07                   | 0.07               | 0.21                   | 0.09               | 78                 | 1              | Silt    |
| Golf course                  | 0.06                   | 0.06               | 0.18                   | 0.12               | 72                 | 2              | Silt    |
| Dairy                        | 0.09                   | 0.05               | 0.17                   | 0.29               | 60                 | 3              | Silt    |
| Average                      | 0.13                   | 0.09               | 0.26                   | 0.23               |                    |                |         |

\* Sand in the surface to 6-in. layer and clay in the 6- to 12-in. layer.



deviation increased about 0.13 in. for each layer when the tentative average relations were used.

60. In general, accuracy of prediction varies with texture and wetness index, as shown by weighted averages of the 24 sites in table 7. Accuracy is poorest for clay soils and wet soils.

Table 7

Average Deviations, in Inches of Water, Between Measured and Predicted Moisture Content for Prediction Development Sites Grouped by Texture and Wetness Index for Specific and Tentative Average Relations

| Wetness Index                 | Sand               |                         | Silt               |                         | Clay               |                         | Average            |                         |
|-------------------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|
|                               | Specific Relations | Tentative Avg Relations | Specific Relations | Tentative Avg Relations | Specific Relations | Tentative Avg Relations | Specific Relations | Tentative Avg Relations |
| <u>Surface to 6-in. Layer</u> |                    |                         |                    |                         |                    |                         |                    |                         |
| 1                             | ----               | ----                    | 0.07               | 0.21                    | ----               | ----                    | 0.07               | 0.21                    |
| 2                             | 0.10               | 0.27                    | 0.07               | 0.23                    | 0.18               | 0.26                    | 0.10               | 0.25                    |
| 3                             | ----               | ----                    | 0.12               | 0.22                    | 0.11               | 0.11                    | 0.12               | 0.22                    |
| 4                             | ----               | ----                    | 0.21               | 0.29                    | 0.19               | 0.28                    | 0.21               | 0.29                    |
| Avg                           | 0.10               | 0.27                    | 0.13               | 0.25                    | 0.17               | 0.26                    | 0.13               | 0.26                    |
| <u>6- to 12-in. Layer</u>     |                    |                         |                    |                         |                    |                         |                    |                         |
| 1                             | ----               | ----                    | 0.07               | 0.09                    | ----               | ----                    | 0.07               | 0.09                    |
| 2                             | 0.07               | 0.22                    | 0.07               | 0.18                    | 0.10               | 0.27                    | 0.08               | 0.21                    |
| 3                             | ----               | ----                    | 0.08               | 0.25                    | 0.11               | 0.29                    | 0.09               | 0.29                    |
| 4                             | ----               | ----                    | 0.14               | 0.26                    | 0.14               | 0.28                    | 0.14               | 0.26                    |
| Avg                           | 0.07               | 0.22                    | 0.09               | 0.20                    | 0.12               | 0.28                    | 0.09               | 0.23                    |

#### Tests on Trafficability-university Sites

61. At the sites established in cooperation with various universities in the early years of the project, soil strength and gravimetric moisture measurements were made weekly. Representative sites were selected to make another check on the accuracy of predictions made with the



Table 8

Average Deviations, in Inches of Water, Between Measured Moisture  
Content on Trafficability-university Sites and That  
Predicted Using Tentative Average Relations

| <u>Location</u>      | <u>Surface to<br/>6-in. Layer</u> | <u>6- to<br/>12-in. Layer</u> | <u>No.<br/>Comparisons</u> | <u>Wetness<br/>Index</u> |
|----------------------|-----------------------------------|-------------------------------|----------------------------|--------------------------|
| Union, S. C.         |                                   |                               |                            |                          |
| Dwight               | 0.48                              | 0.44                          | 20                         | 4                        |
| Carlisle             | 0.54                              | 0.66                          | 20                         | 4                        |
| Boylston             | 0.27                              | 0.22                          | 43                         | 3                        |
| Manning              | 0.13                              | 0.09                          | 41                         | 3                        |
| Rapid City, S. Dak.  |                                   |                               |                            |                          |
| Vale                 | 0.28                              | 0.29                          | 49                         | 3                        |
| Orman                | 0.38                              | 0.26                          | 49                         | 3                        |
| Purdue, Ind.         |                                   |                               |                            |                          |
| Crosby               | 0.24                              | 0.30                          | 51                         | 3                        |
| Clyde                | 0.32                              | 0.37                          |                            |                          |
| Lincoln, Neb.        |                                   |                               |                            |                          |
| Agricultural College | 0.33                              | 0.35                          | 41                         | 4                        |
| Emerald              | 0.32                              | 0.27                          | 41                         | 2                        |
| Total average        | 0.33                              | 0.32                          |                            |                          |

tentative average relations. Table 8 shows that, on the average, the deviations using average relations were greater than those for the prediction development sites, by about 0.08 in. per 6-in. layer. Part of the wider spread between predicted and measured moisture contents is due to the fact that tension values were not taken and, hence, the field-maximum values are probably not as accurately estimated. Part of the spread is also due to the wetness of most of the trafficability-university sites. For instance, the several South Carolina sites were located in heavy clay or where restricted drainage was evident. Depletions using the average relations were, therefore, much faster than actual, and considerable deviations accumulated. The prediction development sites discussed in paragraphs 58-60 showed greater deviations for wet sites than for drained sites, perhaps for the same reason.



### Tests on Survey Sites

#### First prediction

62. The tentative average moisture-prediction relations were applied to 617 survey sites distributed in the southern, northeastern, lake states, and intermountain regions (Appendix B, fig. B1). Rain gages were not maintained at these sites; rainfall records needed for prediction were obtained from the nearest official weather station which was usually from one to five miles away from the site, and in some instances the distance was greater. The accuracy of prediction for these sites is shown below:

| <u>Survey Region</u> | <u>No.<br/>of<br/>Sites</u> | <u>Average Deviations Between<br/>Measured and Predicted<br/>Moisture Content in Inches</u> |                               |
|----------------------|-----------------------------|---|-------------------------------|
|                      |                             | <u>Surface to<br/>6-in. Layer</u>   | <u>6- to 12-in.<br/>Layer</u> |
| Southern             | 178                         | 0.33  | 0.29                          |
| Northeastern         | 135                         | 0.54  | 0.49                          |
| Lake states          | 160                         | 0.37  | 0.33                          |
| Intermountain        | 144                         | 0.36  | 0.31                          |
| All survey sites     | 617                         | 0.39  | 0.35                          |

63. The accuracy of prediction for the survey sites is less than for the prediction development sites, the average deviation being 0.12 in. greater for each layer. This loss in accuracy can be attributed partly to a less accurate rainfall record as gages were located some distance from the sites, and partly to the extrapolation of the average relations into combinations of conditions not covered by the prediction development sites. In fact, the accuracy of prediction by survey region reflects the more complete coverage at the prediction development sites. The northeastern region, where poorest accuracy was obtained, had no prediction development sites; lake states, next in accuracy, had prediction development sites at only one location; intermountain, with better accuracy, had three locations; and southern, with the best accuracy had eight locations for prediction development sites at the time most of the tentative average relations were developed.

64. The average deviation of both soil layers for the survey sites, about 0.37 in. per 6-in. depth, is equivalent to about 4% to 6% moisture



content on the dry weight basis, depending on the bulk density (dry unit weight) of the soil. At high moisture contents this error would be too large for suitable applications to trafficability. The problem is, then, to identify the source of the error, and to correct the error with improved average relations. It may be found that correction or adjustment of factors applied to the average prediction relations may effect the desired improvement. For conditions not covered by the prediction development sites, such as different climate, soil material, or water-table effects, additional detailed soil-moisture measurements may be needed.

#### Re-evaluation of survey site data

65. Erratic data. Data from all the survey sites were carefully re-examined to determine causes for erratic deviations of some sites. As a result of this study, 16 sites that had too many erratic readings for successful prediction were eliminated. Many of these were in wet soils or in those with high organic content. These 16 sites are indicated in tables B2d, B3b, and B3d, Appendix B. Errors in bulk density that produced unreasonable moisture contents upon computation usually occurred for these sites. For instance, at one site 7 in. of water was computed to be held in a 6-in. layer of soil. Thirteen of these 16 sites were in the northeastern region and three in the intermountain. Their elimination left a total of 601 sites.

66. Wetness index. Wetness indexes were re-evaluated for the 601 remaining sites and some changes were made, which in turn changed the estimated field-maximum and -minimum values, and the depletion curves.

67. Irrigated and arid sites. Even with these adjustments, there was still some question about the validity of including certain intermountain sites in the analysis. The questionable sites included those that had been wet by irrigation at some time during the course of the survey, those desert sites that were continuously dry, and some sites that were continuously wet throughout the year by natural subirrigation from water tables. Average deviations for the intermountain sites in these categories may be compared in the following tabulation to the deviations of the sites wetted by rain and normally dried.



| Intermountain<br>Site<br>Category | No.<br>of<br>Sites | Average Deviations Between<br>Measured and Predicted<br>Moisture Content in Inches |                       |
|-----------------------------------|--------------------|--|-----------------------|
|                                   |                    | Surface to<br>6-in. Layer  | 6- to 12-in.<br>Layer |
| Irrigated                         | 24                 | 0.25   | 0.22                  |
| Continuously dry                  | 47                 | 0.22   | 0.19                  |
| Continuously wet                  | 17                 | 0.77   | 0.68                  |
| Normal sites                      | 53                 | 0.29   | 0.25                  |
| All sites                         | 141                | 0.32   | 0.28                  |

68. For the 24 irrigated sites, prediction was not made through the time of irrigation because the exact time and amount of irrigation were not known. The record, therefore, was started again on the sampling date following each irrigation. This decreased the deviations because all cumulative errors were wiped out. Deviations of the continuously dry desert sites were also low, principally because the soil-moisture contents were continuously small. Deviations for the sites continuously wet from water tables were very high with an average of 0.77 and 0.68 in. for the surface to 6-in. and 6- to 12-in. layers, respectively. These wet sites were, however, not too dissimilar to wet sites in other survey regions. Because the data appeared to be correct and to represent naturally occurring conditions, and because their large deviations did not appear to be the result of instrumental or computational errors, it was decided to include all of these 141 sites, without additional adjustments, in further analyses.

#### Second prediction

69. A reprediction of the 601 survey sites was made. The average deviations of the repredicted from measured moisture contents were as follows:

| Survey Region    | No.<br>of<br>Sites | Average Deviations Between<br>Measured and Repredicted<br>Moisture Content in Inches |                       |
|------------------|--------------------|--|-----------------------|
|                  |                    | Surface to<br>6-in. Layer  | 6- to 12-in.<br>Layer |
| Southern         | 178                | 0.28   | 0.28                  |
| Northeastern     | 122                | 0.37   | 0.37                  |
| Lake states      | 160                | 0.38   | 0.33                  |
| Intermountain    | 141                | 0.32   | 0.28                  |
| All survey sites | 601                | 0.33   | 0.31                  |



70. Comparison of the average deviations for all sites with those tabulated in paragraph 62 shows that the adjustments that were made in wetness index and the deletion of erratic sites reduced the average deviations for the two soil layers by 0.06 and 0.04 in. of water. The greatest reduction occurred in the northeastern region, mostly because of the larger number of erratic sites eliminated in this region.

71. The reprediction indicates that accuracy by region is still directly related to the number of prediction development sites within each region. Accuracy for the southern region approaches that for the prediction development sites. For the surface to 6-in. layer the average deviation is 0.26 in. vs 0.28 in., and for the 6- to 12-in. layer, it is 0.23 vs 0.28 in., for the prediction development and survey sites, respectively. These moisture content differences are less than one per cent on the dry weight basis.

#### Studies to Determine the Source of Prediction Error

##### Source of major error

72. A simple analysis of the deviations was next carried out by grouping them in classes on the basis of soil properties and site characteristics in order to determine if prediction was less successful for certain groups of conditions than for others. Soil texture, wetness index, and organic content proved to have considerable significance. As these characteristics are related to one another, it is difficult to separate the importance of the individual factors by this method of analysis. For instance, low-lying, poorly drained sites would have wetness indexes of 4, would tend to have clay soils, and would be high in organic matter. Likewise, well-drained sites would have coarser soil material and less organic content.

73. Wetness index and texture. Table 9 shows that the deviations for clay soils were, in general, higher than those for the sandy or silty soils. This difference was more apparent in the surface to 6-in. layer than in the 6- to 12-in. layer. Prediction was also less accurate for poorly drained sites. The wet (index 4) sites, in general, have deviations of 0.10 in. greater than the less wet (index 3) sites, and there is an



Table 9

Deviations Between Measured and Predicted Moisture Content  
of Soils Grouped by Wetness Index and Texture

| Site Characteristics<br><u>Wetness Index</u> <u>Texture</u> |      | <u>Surface to 6-in. Layer</u> |                                       | <u>6- to 12-in. Layer</u> |                                       |
|---|------|-------------------------------|---------------------------------------|---------------------------|---------------------------------------|
|   |      | <u>No. of Sites</u>           | <u>Average Deviation in. of Water</u> | <u>No. of Sites</u>       | <u>Average Deviation in. of Water</u> |
| All   | Sand | 260                           | 0.30                                  | 247                       | 0.30                                  |
|   | Silt | 127                           | 0.30                                  | 105                       | 0.29                                  |
|   | Clay | 214                           | 0.39                                  | 249                       | 0.33                                  |
| 1   | All  | 91                            | 0.22                                  | 91                        | 0.20                                  |
| 2   |      | 291                           | 0.31                                  | 291                       | 0.29                                  |
| 3   |      | 112                           | 0.35                                  | 112                       | 0.33                                  |
| 4   |      | 107                           | 0.45                                  | 107                       | 0.43                                  |
| 1   | Sand | 53                            | 0.21                                  | 45                        | 0.21                                  |
|   | Silt | 17                            | 0.23                                  | 12                        | 0.22                                  |
|   | Clay | 21                            | 0.22                                  | 34                        | 0.19                                  |
| 2   | Sand | 134                           | 0.27                                  | 134                       | 0.28                                  |
|   | Silt | 65                            | 0.31                                  | 48                        | 0.29                                  |
|   | Clay | 92                            | 0.38                                  | 109                       | 0.31                                  |
| 3   | Sand | 39                            | 0.36                                  | 37                        | 0.36                                  |
|   | Silt | 23                            | 0.26                                  | 23                        | 0.26                                  |
|   | Clay | 50                            | 0.38                                  | 52                        | 0.34                                  |
| 4   | Sand | 34                            | 0.48                                  | 31                        | 0.49                                  |
|   | Silt | 22                            | 0.34                                  | 22                        | 0.37                                  |
|   | Clay | 51                            | 0.49                                  | 54                        | 0.42                                  |
| All 601 sites   |      |                               | 0.33                                  |                           | 0.31                                  |

even greater spread in deviations between them and the drier sites with wetness indexes of 1 and 2. It should be noted that on wetness-index-4 locations, the moisture contents of both sandy and clay soils are about equally difficult to predict. Predictions for the silt soils had a lower deviation than those of the other textures, but were still higher than for better drained sites.

74. Wetness index and organic matter. The presence of over 4% organic matter made accurate soil-moisture prediction more difficult when all sites were considered. Dry sites generally had less than 4% organic matter content and low deviation. For wet sites, there was very little relation in the surface to 6-in. layer between amount of organic matter and accuracy of prediction, but in the 6- to 12-in. layer, the trend



Table 10

Deviations Between Measured and Predicted Moisture Content  
of Soils Grouped by Wetness Index and Organic Matter

| Wetness<br>Index | Surface to 6-in. Layer |                 |                                      | 6- to 12-in. Layer     |                 |                                      |
|------------------|------------------------|-----------------|--------------------------------------|------------------------|-----------------|--------------------------------------|
|                  | Organic<br>Matter<br>% | No. of<br>Sites | Average<br>Deviation<br>in. of Water | Organic<br>Matter<br>% | No. of<br>Sites | Average<br>Deviation<br>in. of Water |
| 1                |                        |                 |                                      | 0.0- 0.9               | 52              | 0.21                                 |
|                  | 0.0- 1.9               | 63              | 0.22                                 | 1.0- 1.9               | 29              | 0.20                                 |
|                  | 2.0- 3.9               | 24              | 0.22                                 | 2.0- 3.9               | 9               | 0.19                                 |
|                  | 4.0- 5.9               | 3               | 0.23                                 | 4.0- 5.9               | 1               | 0.24                                 |
|                  | 6.0-15.0               | 1               | 0.11                                 | 6.0-13.0               | 0               | ----                                 |
| 2                |                        |                 |                                      | 0.0- 0.9               | 91              | 0.27                                 |
|                  | 0.0- 1.9               | 72              | 0.27                                 | 1.0- 1.9               | 99              | 0.31                                 |
|                  | 2.0- 3.9               | 121             | 0.30                                 | 2.0- 3.9               | 75              | 0.31                                 |
|                  | 4.0- 5.9               | 86              | 0.35                                 | 4.0- 5.9               | 26              | 0.37                                 |
|                  | 6.0-15.0               | 12              | 0.44                                 | 6.0-13.0               | 0               | ----                                 |
| 3                |                        |                 |                                      | 0.0- 0.9               | 50              | 0.30                                 |
|                  | 0.0- 1.9               | 34              | 0.27                                 | 1.0- 1.9               | 27              | 0.33                                 |
|                  | 2.0- 3.9               | 47              | 0.36                                 | 2.0- 3.9               | 22              | 0.35                                 |
|                  | 4.0- 5.9               | 29              | 0.40                                 | 4.0- 5.9               | 13              | 0.42                                 |
|                  | 6.0-15.0               | 2               | 0.78                                 | 6.0-13.0               | 0               | ----                                 |
| 4                |                        |                 |                                      | 0.0- 0.9               | 29              | 0.34                                 |
|                  | 0.0- 1.9               | 27              | 0.49                                 | 1.0- 1.9               | 34              | 0.44                                 |
|                  | 2.0- 3.9               | 31              | 0.39                                 | 2.0- 3.9               | 26              | 0.46                                 |
|                  | 4.0- 5.9               | 33              | 0.46                                 | 4.0- 5.9               | 15              | 0.48                                 |
|                  | 6.0-15.0               | 16              | 0.51                                 | 6.0-13.0               | 3               | 0.63                                 |
| All sites        |                        |                 |                                      | 0.0- 0.9               | 222             | 0.27                                 |
|                  | 0.0- 1.9               | 196             | 0.28                                 | 1.0- 1.9               | 189             | 0.31                                 |
|                  | 2.0- 3.9               | 223             | 0.32                                 | 2.0- 3.9               | 132             | 0.34                                 |
|                  | 4.0- 5.9               | 151             | 0.38                                 | 4.0- 5.9               | 55              | 0.41                                 |
|                  | 6.0-15.0               | 31              | 0.39                                 | 6.0-13.0               | 3               | 0.63                                 |

seemed to be quite significant, as shown in table 10.

75. Water-table problem. Soils wet from a water table (wetness index 4) present one of the major problems in prediction of soil moisture. For the prediction development sites, it had been found that, by use of ground-water well data from these sites, periods of high water could be identified and prediction improved by not depleting during those periods. However, for the survey sites, or any sites where water-table characteristics are not known, a system has not yet been devised to predict time of occurrence of a water table that will influence moisture conditions in



the surface to 12-in. layer, nor the duration of this influence. It was also found that errors in soil-moisture content, as determined by gravimetric samples sometimes occur in sampling very wet soils, hence both the prediction and measured values may be in error and contribute to the large deviations of wetness-index-4 sites.

76. Duration of wet conditions. The wetness index was devised to classify the degree of wetting of a soil, an intensity factor, without specifying the duration of the wet conditions. The effect of the duration was shown by grouping the sites by the number of times wet soils were sampled during the period of record. Table 11 shows that deviations were

Table 11

Deviation Between Measured and Predicted Moisture Content  
Based on the Frequency of Wet Periodic Moisture Samples

| No. of<br>Wet Samples* | <u>Surface to 6-in. Layer</u> |   | <u>6- to 12-in. Layer</u> |   |
|------------------------|-------------------------------|---|---------------------------|---|
|                        | <u>No. of<br/>Sites</u>       | <u>Average<br/>Deviation<br/>in. of Water</u> | <u>No. of<br/>Sites</u>   | <u>Average<br/>Deviation<br/>in. of Water</u> |
| All dry                | 137                           | 0.27  | 128                       | 0.27  |
| 1 or 2 wet             | 190                           | 0.29  | 184                       | 0.25  |
| 3 or 4 wet             | 193                           | 0.32  | 158                       | 0.29  |
| 5 to 8 wet             | 81                            | 0.55  | 131                       | 0.48  |

\* A sample is considered as "wet" if moisture content is 80% or more of the calculated field maximum.

greater for those sites where the moisture content of most of the samples was higher than 80% of calculated field maximum. Again, this indicates that the prediction and perhaps measurement of the moisture content are far more difficult for wet soils than for drier soils.

Source of minor error

77. Vegetation. Deviations between measured and predicted moisture content based on vegetation groupings were very similar for all classes except for desert shrub and bare areas, as shown in table 12. The desert shrub class, with an average deviation of 0.20 in. for both layers, had the lowest deviations. This class included most of the desert sites of the intermountain region where there was little fluctuation in the moisture content. The bare areas, with 0.92 and 0.58 in. for the surface to 6-in. and 6- to 12-in. layers, had the highest deviations. There were only six



Table 12

Deviation Between Measured and Predicted Moisture Content  
of Sites Grouped by Various Minor Factors

| Site Characteristics    | Surface to 6-in. Layer |                                | 6- to 12-in. Layer |                                |
|-------------------------|------------------------|--------------------------------|--------------------|--------------------------------|
|                         | No. of Sites           | Average Deviation in. of Water | No. of Sites       | Average Deviation in. of Water |
| <u>Vegetation</u>       |                        |                                |                    |                                |
| Herbaceous              | 408                    | 0.34                           | 408                | 0.32                           |
| Herbaceous and trees    | 22                     | 0.37                           | 22                 | 0.32                           |
| Hardwood                | 57                     | 0.32                           | 57                 | 0.30                           |
| Hardwood and conifer    | 24                     | 0.29                           | 24                 | 0.29                           |
| Conifer                 | 45                     | 0.29                           | 45                 | 0.30                           |
| Desert shrub            | 39                     | 0.20                           | 39                 | 0.20                           |
| Bare                    | 6                      | 0.92                           | 6                  | 0.58                           |
| <u>Slope</u>            |                        |                                |                    |                                |
| Lower flat 0-3%         | 105                    | 0.42                           | 105                | 0.38                           |
| Upper flat 0-3%         | 339                    | 0.32                           | 339                | 0.30                           |
| 4-9%                    | 108                    | 0.30                           | 108                | 0.29                           |
| 10-35%                  | 49                     | 0.30                           | 49                 | 0.30                           |
| <u>Position</u>         |                        |                                |                    |                                |
| Bottom                  | 110                    | 0.42                           | 110                | 0.39                           |
| Terrace                 | 167                    | 0.31                           | 167                | 0.29                           |
| Upland                  | 324                    | 0.31                           | 324                | 0.29                           |
| <u>Elevation</u>        |                        |                                |                    |                                |
| 0-1000 ft               | 312                    | 0.31                           | 312                | 0.31                           |
| 1001-4000 ft            | 173                    | 0.36                           | 173                | 0.33                           |
| 4001-5000 ft            | 59                     | 0.36                           | 59                 | 0.31                           |
| 5001-6500 ft            | 47                     | 0.29                           | 47                 | 0.27                           |
| 6501-10,000 ft          | 10                     | 0.27                           | 10                 | 0.26                           |
| <u>Latitude</u>         |                        |                                |                    |                                |
| 30°00'-32°30'           | 102                    | 0.29                           | 102                | 0.28                           |
| 32°31'-35°00'           | 76                     | 0.26                           | 76                 | 0.27                           |
| 37°00'-40°00'           | 39                     | 0.28                           | 39                 | 0.28                           |
| 40°01'-42°30'           | 161                    | 0.39                           | 161                | 0.36                           |
| 42°31'-45°00'           | 157                    | 0.32                           | 157                | 0.29                           |
| 45°01'-47°30'           | 66                     | 0.39                           | 66                 | 0.34                           |
| <u>Parent material</u>  |                        |                                |                    |                                |
| Glacial                 | 167                    | 0.38                           | 167                | 0.35                           |
| Alluvial                | 239                    | 0.34                           | 239                | 0.32                           |
| Loessial                | 88                     | 0.28                           | 88                 | 0.26                           |
| Residual sedimentary    | 15                     | 0.33                           | 15                 | 0.27                           |
| Residual igneous        | 7                      | 0.22                           | 7                  | 0.22                           |
| Residual unconsolidated | 72                     | 0.25                           | 72                 | 0.27                           |
| Miscellaneous           | 13                     | 0.51                           | 13                 | 0.36                           |
| <u>Stone content</u>    |                        |                                |                    |                                |
| None                    | 472                    | 0.33                           | 467                | 0.32                           |
| 1-5% by volume          | 80                     | 0.31                           | 73                 | 0.28                           |
| 6-15% by volume         | 23                     | 0.30                           | 31                 | 0.29                           |
| 16-40% by volume        | 26                     | 0.40                           | 30                 | 0.33                           |
| <u>Liquid limit</u>     |                        |                                |                    |                                |
| Nonplastic              |                        |                                | 217                | 0.31                           |
| 1-30                    |                        |                                | 129                | 0.27                           |
| 31-50                   |                        |                                | 213                | 0.32                           |
| 51-80                   |                        |                                | 42                 | 0.39                           |
| <u>Plasticity index</u> |                        |                                |                    |                                |
| Nonplastic              |                        |                                | 217                | 0.31                           |
| 1-7                     |                        |                                | 81                 | 0.29                           |
| 8-21                    |                        |                                | 243                | 0.30                           |
| 22-50                   |                        |                                | 60                 | 0.36                           |



sites in this class and these included several playas of the intermountain survey sites that were continuously wet. No allowance was made in the tentative average relations for continuously wet sites or nonvegetated sites. Therefore wet sites, such as the playas, were depleted as though they were well drained, and a large difference occurred between measured and predicted moisture contents.

78. Slope. Various degrees of slope showed very little differences in average deviation. However, there were but 49 sites on slopes greater than 10% and the aspect of slope was not considered. Sites in the lower flats (0-3% slope class) with their higher water tables and higher organic matter contents showed the expected higher deviations.

79. Topographical position. Deviations based on position showed upland and terrace deviations to be about the same, roughly 0.30 in. for each layer. The bottomland sites had deviations about 0.10 in. higher, again reflecting the influence of the sites with a wetness index of 4.

80. Elevation and latitude. Differences in deviations of predicted from measured moisture content based on different groups of elevations were insignificant. Based on latitude, deviations were greater at latitudes north of 40°.

81. Parent material. Glacial and alluvial soils had higher deviations than residual or loessial soils.

82. Stone content. About 80% of the survey sites were free of stones. Deviations for sites with stone contents below 15% by volume were very similar, but were somewhat higher for stone contents greater than 15% by volume.

83. Atterberg limits. Average deviations for the 6- to 12-in. layer were larger for soils with a liquid limit greater than 50. Deviations also increased for this layer when plasticity index values were above 21.

#### Regional effects

84. Wetness index. Grouping sites by regions, average deviations increased as the wetness index increased. The same relation held throughout all the regions but was perhaps greater in the intermountain region where natural subirrigation caused some sites to remain continuously wet even though rainfall and soil type would indicate considerable drying.



This prolonged wet condition increased deviations for some of the wetness-index-3 and many of the wetness-index-4 sites; see table 13.

Table 13  
Deviations Between Measured and Predicted Moisture Content  
of Soils Grouped by Wetness Index and Regions

| Wet-<br>ness<br>Index  | Region   |       |              |       |             |       |               |       |             |       |
|------------------------|----------|-------|--------------|-------|-------------|-------|---------------|-------|-------------|-------|
|                        | Southern |       | Northeastern |       | Lake States |       | Intermountain |       | All Surveys |       |
|                        | Avg      |       | Avg          |       | Avg         |       | Avg           |       | Avg         |       |
|                        | Dev      |       | Dev          |       | Dev         |       | Dev           |       | Dev         |       |
|                        | No.      | in.   | No.          | in.   | No.         | in.   | No.           | in.   | No.         | in.   |
|                        | of       | of    | of           | of    | of          | of    | of            | of    | of          | of    |
|                        | Sites    | Water | Sites        | Water | Sites       | Water | Sites         | Water | Sites       | Water |
| Surface to 6-in. Layer |          |       |              |       |             |       |               |       |             |       |
| 1                      | 32       | 0.23  | 3            | 0.15  | 2           | 0.24  | 54            | 0.22  | 91          | 0.22  |
| 2                      | 48       | 0.25  | 66           | 0.32  | 125         | 0.35  | 52            | 0.28  | 291         | 0.31  |
| 3                      | 58       | 0.25  | 22           | 0.42  | 21          | 0.46  | 11            | 0.50  | 112         | 0.35  |
| 4                      | 40       | 0.37  | 31           | 0.46  | 12          | 0.54  | 24            | 0.55  | 107         | 0.45  |
| 6- to 12-in. Layer     |          |       |              |       |             |       |               |       |             |       |
| 1                      | 32       | 0.22  | 3            | 0.21  | 2           | 0.26  | 54            | 0.19  | 91          | 0.20  |
| 2                      | 48       | 0.27  | 66           | 0.32  | 125         | 0.31  | 52            | 0.24  | 291         | 0.29  |
| 3                      | 58       | 0.27  | 22           | 0.43  | 21          | 0.37  | 11            | 0.37  | 112         | 0.33  |
| 4                      | 40       | 0.35  | 31           | 0.46  | 12          | 0.43  | 24            | 0.53  | 107         | 0.43  |

85. Texture. Deviations for clay soils of the southern survey sites were not as large as those of other regions. In the lake states, silts gave considerable difficulty in prediction, as shown in table 14.

Table 14  
Deviations Between Measured and Predicted Moisture Content  
of Soils Grouped by Texture and Regions

| Soil<br>Tex-<br>ture   | Region   |       |              |       |             |       |               |       |             |       |
|------------------------|----------|-------|--------------|-------|-------------|-------|---------------|-------|-------------|-------|
|                        | Southern |       | Northeastern |       | Lake States |       | Intermountain |       | All Surveys |       |
|                        | Avg      |       | Avg          |       | Avg         |       | Avg           |       | Avg         |       |
|                        | Dev      |       | Dev          |       | Dev         |       | Dev           |       | Dev         |       |
|                        | No.      | in.   | No.          | in.   | No.         | in.   | No.           | in.   | No.         | in.   |
|                        | of       | of    | of           | of    | of          | of    | of            | of    | of          | of    |
|                        | Sites    | Water | Sites        | Water | Sites       | Water | Sites         | Water | Sites       | Water |
| Surface to 6-in. Layer |          |       |              |       |             |       |               |       |             |       |
| Sand                   | 69       | 0.26  | 62           | 0.32  | 68          | 0.33  | 61            | 0.28  | 260         | 0.30  |
| Silt                   | 60       | 0.25  | 11           | 0.24  | 36          | 0.40  | 20            | 0.26  | 127         | 0.30  |
| Clay                   | 49       | 0.32  | 49           | 0.46  | 56          | 0.41  | 60            | 0.37  | 214         | 0.39  |
| 6- to 12-in. Layer     |          |       |              |       |             |       |               |       |             |       |
| Sand                   | 61       | 0.27  | 62           | 0.38  | 67          | 0.31  | 57            | 0.25  | 247         | 0.30  |
| Silt                   | 53       | 0.25  | 11           | 0.38  | 27          | 0.36  | 14            | 0.25  | 105         | 0.29  |
| Clay                   | 64       | 0.31  | 49           | 0.36  | 66          | 0.34  | 70            | 0.31  | 249         | 0.33  |



86. Texture separate from water table. The effect of texture separate from that of water table was next examined by comparing only those sites with a wetness index of 2. On the average, for all regions, predictions for sands had the lowest deviations, the silts the next, and the clay soils had the highest error. This trend held for both layers, with less difference between groups in the 6- to 12-in. layer; see table 15. This general trend was found in all regions except that occasionally the silt soils were out of line.

Table 15

Deviations Between Measured and Predicted Moisture Content  
of Wetness-index-2 Sites Grouped by Texture and Regions

| Region                        |             |             |              |             |             |             |               |             |             |             |
|-------------------------------|-------------|-------------|--------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|
|                               | Southern    |             | Northeastern |             | Lake States |             | Intermountain |             | All Surveys |             |
|                               | Avg         |             | Avg          |             | Avg         |             | Avg           |             | Avg         |             |
|                               | Dev         |             | Dev          |             | Dev         |             | Dev           |             | Dev         |             |
| Soil                          | No.         | in.         | No.          | in.         | No.         | in.         | No.           | in.         | No.         | in.         |
| Tex-<br>ture                  | of<br>Sites | of<br>Water | of<br>Sites  | of<br>Water | of<br>Sites | of<br>Water | of<br>Sites   | of<br>Water | of<br>Sites | of<br>Water |
| <u>Surface to 6-in. Layer</u> |             |             |              |             |             |             |               |             |             |             |
| Sand                          | 20          | 0.23        | 33           | 0.22        | 57          | 0.31        | 24            | 0.26        | 134         | 0.27        |
| Silt                          | 19          | 0.21        | 8            | 0.27        | 30          | 0.40        | 8             | 0.28        | 65          | 0.31        |
| Clay                          | 9           | 0.41        | 25           | 0.48        | 38          | 0.36        | 20            | 0.30        | 92          | 0.38        |
| <u>6- to 12-in. Layer</u>     |             |             |              |             |             |             |               |             |             |             |
| Sand                          | 15          | 0.24        | 36           | 0.29        | 58          | 0.30        | 25            | 0.23        | 134         | 0.28        |
| Silt                          | 14          | 0.18        | 7            | 0.35        | 21          | 0.31        | 6             | 0.27        | 48          | 0.29        |
| Clay                          | 19          | 0.36        | 23           | 0.36        | 46          | 0.31        | 21            | 0.24        | 109         | 0.31        |

87. Organic matter. There was a marked increase in average deviations as organic matter increased in three regions. The apparent lack of this trend at the southern survey sites may have been due in part to the infrequent occurrence of samples in the high organic classes; see table 16.



Table 16

Deviations Between Measured and Predicted Moisture Content  
of Soils Grouped by Organic Matter and Regions

| Or-<br>ganic<br>Mat-<br>ter<br>% | Region   |       |              |       |             |       |               |       |             |       |
|----------------------------------|----------|-------|--------------|-------|-------------|-------|---------------|-------|-------------|-------|
|                                  | Southern |       | Northeastern |       | Lake States |       | Intermountain |       | All Surveys |       |
|                                  | Avg      |       | Avg          |       | Avg         |       | Avg           |       | Avg         |       |
|                                  | Dev      |       | Dev          |       | Dev         |       | Dev           |       | Dev         |       |
|                                  | No.      | in.   | No.          | in.   | No.         | in.   | No.           | in.   | No.         | in.   |
|                                  | of       | of    | of           | of    | of          | of    | of            | of    | of          | of    |
|                                  | Sites    | Water | Sites        | Water | Sites       | Water | Sites         | Water | Sites       | Water |
| <u>Surface to 6-in. Layer</u>    |          |       |              |       |             |       |               |       |             |       |
| 0.00<br>to<br>1.99               | 104      | 0.26  | 15           | 0.29  | 19          | 0.33  | 58            | 0.31  | 196         | 0.28  |
| 2.00<br>to<br>3.99               | 62       | 0.29  | 43           | 0.37  | 65          | 0.33  | 53            | 0.29  | 223         | 0.32  |
| 4.00<br>to<br>5.99               | 9        | 0.33  | 50           | 0.39  | 68          | 0.41  | 24            | 0.33  | 151         | 0.38  |
| 6.00<br>to<br>15.00              | 3        | 0.31  | 14           | 0.43  | 8           | 0.60  | 6             | 0.57  | 31          | 0.49  |
| <u>6- to 12-in. Layer</u>        |          |       |              |       |             |       |               |       |             |       |
| 0.00<br>to<br>0.99               | 132      | 0.26  | 12           | 0.36  | 40          | 0.29  | 38            | 0.25  | 222         | 0.27  |
| 1.00<br>to<br>1.99               | 39       | 0.33  | 36           | 0.35  | 49          | 0.31  | 65            | 0.27  | 189         | 0.31  |
| 2.00<br>to<br>3.99               | 5        | 0.26  | 53           | 0.36  | 45          | 0.34  | 29            | 0.30  | 132         | 0.34  |
| 4.00<br>to<br>5.99               | 2        | 0.31  | 19           | 0.41  | 26          | 0.41  | 8             | 0.45  | 55          | 0.41  |
| 6.00<br>to<br>13.00              | 0        | ----  | 2            | 0.71  | 0           | ----  | 1             | 0.47  | 3           | 0.63  |



## PART IV: CONCLUSIONS AND RECOMMENDATIONS

Conclusions

88. The conclusions drawn from the analysis presented in this report are as follows:

- a. The method for predicting soil-moisture content developed from sites with sufficient data to define the moisture regime can be applied successfully to other sites for which sufficient data are not available to define the moisture regime.
- b. A tentative set of average relations derived from factors and relations for specific sites can be successfully applied to a variety of sites.
- c. The accuracy of prediction using the tentative set of average relations is fairly satisfactory on the average as shown below. The accuracy from individually derived relations is shown on the first line for comparison.

|  | No.<br>Sites | Average Deviation, in<br>Inches of Water, Between<br>Measured and Predicted<br>Moisture Content |                       |
|--|--------------|---|-----------------------|
|  |              | Surface to<br>6-in. Layer   | 6- to<br>12-in. Layer |
| Prediction development<br>sites (table 6)        |              |   |                       |
| Specific relations                               | 24           | 0.13  | 0.09                  |
| Tentative average<br>relations                   | 24           | 0.26  | 0.23                  |
| Trafficability-<br>university sites<br>(table 8) |              |   |                       |
| Tentative average<br>relations                   | 10           | 0.33  | 0.32                  |
| Survey sites (par. 69)                           |              |   |                       |
| Tentative average<br>relations                   | 601          | 0.33  | 0.31                  |

- d. The accuracy is not satisfactory for poorly drained and wet sites, and for soils high in organic content and clay as indicated for the survey sites.



| Site Characteristics   | Average Deviation, in Inches of<br>Water, Between Measured and<br>Predicted Moisture Content |                      |                       |                      |
|------------------------|--|----------------------|-----------------------|----------------------|
|                        | Surface to<br>6-in. Layer  |                      | 6- to 12-in.<br>Layer |                      |
|                        | No. of<br>Sites  | Average<br>Deviation | No. of<br>Sites       | Average<br>Deviation |
| Drained sites          | 382  | 0.29                 | 382                   | 0.27                 |
| Sites with water table | 219  | 0.40                 | 219                   | 0.38                 |
| Organic content, <4%   | 419  | 0.30                 | 543                   | 0.30                 |
| Organic content, >4%   | 182  | 0.38                 | 58                    | 0.42                 |
| Sand soil              | 260  | 0.30                 | 247                   | 0.30                 |
| Silt soil              | 127  | 0.30                 | 105                   | 0.29                 |
| Clay soil              | 214  | 0.39                 | 249                   | 0.33                 |

### Recommendations

89. To improve the accuracy of soil-moisture content prediction by refinement or modification of the tentative average relations, it is recommended that the studies described in the following paragraphs be pursued.

- a. Correlation studies relating soil and site factors to prediction relations derived from sites with detailed moisture data should be continued in order to make the tentative averages more selective for particular soil and site conditions.
- b. Further studies should be made of soils wet by water tables to determine what soils and sites are influenced by water tables, and the time of occurrence and duration of the water-table effect.
- c. Studies should also be conducted to improve prediction of other problem soils, such as mineral soils with more than 4% organic content, clay soils, pan soils with perched water tables, and stony soils.
- d. Studies should be continued to systematize the selection of transition dates, considering, in particular, climatological and phenological methods.

90. To further the over-all objective of predicting trafficability by remote means, the following studies are recommended:

- a. Investigations or improvements of methods and equipment for measuring moisture content under wet conditions, and density, as the conventional means are fallible under extreme conditions critical to trafficability.
- b. Studies of horizontal and vertical variation in physical



properties of soils that affect soil moisture and strength so that areal accuracy of trafficability forecasts can be ascertained.

- c. Laboratory studies of natural soils with controlled water-table levels to expedite and increase precision of moisture-strength measurements under very wet conditions for diverse soils.
- d. Specific studies of soil moisture and strength for partly frozen and thawing soils as these represent a special wet condition.
- e. Correlation studies among physical properties of soil and with soil moisture-strength relations in order to adapt trafficability forecasts to a variety of soil conditions.
- f. Studies to develop criteria for describing sites in uniform terms for forecasting trafficability, and procedures for applying trafficability forecasts over small and large areas. Preliminary maps of local areas should be made to demonstrate these developments.
- g. Exploration of the use of vegetation analogs, as well as climatic, geologic, and pedologic conditions as a means of extending knowledge of trafficability of soils to broader areas.



## APPENDIX A: TENTATIVE AVERAGE SOIL-MOISTURE PREDICTION RELATIONS AND A SAMPLE OF THEIR APPLICATION

1. This appendix illustrates the use of the tentative average relations developed for predicting the moisture content in the surface to 6-in. and 6- to 12-in. layers of a variety of soils in the United States. The relations include the field-maximum and -minimum moisture contents, transition dates, minimum-size storm, accretion relations, and depletion relations. The tentative average relations for most\* of the soil, climate, and hydrologic conditions found in the United States are presented in the form of tables, and the selection from them of the averages to use in a prediction for a particular site is explained.

### Sample Prediction

2. This sample prediction is presented in a simplified form with each step shown in detail. The site chosen for the illustration is Survey Site 246, located in the southern region near Holly Springs, Miss. A description of the site including soil properties is given in Appendix B.

3. Soil-moisture prediction is facilitated by use of a form such as fig. A1. Across the top of this form are four boxes containing information concerning the site. Box 1 gives the general location information, date of computation, and computer's initials. Box 2 gives the field-maximum and -minimum moisture contents for the two 6-in. soil layers. The field-maximum values were calculated from equations 4 and 6 of table A1 and the field minimum from equations 7 and 8. In box 3, the latitude of the site and transition dates for this latitude are listed from table A2; spring depletion starts on March 17. In box 4, the soil texture of each layer is given so that depletions can be selected. The depletion factors are selected from table A6 considering the field-maximum and -minimum values in box 2. The average depletion relations for the sample prediction site are then listed on a form as shown in fig. A2. Their selection and derivation

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\* The average relations do not apply to soils in arid regions, organic soils, or to sites where the surface to 12-in. layer is affected by a stationary water table for two days or longer.







| Depletion, in. of Moisture, for Site 246 |             |             |       |                 |                 |                        |             |             |       |                 |                 |
|--|-------------|-------------|-------|-----------------|-----------------|------------------------|-------------|-------------|-------|-----------------|-----------------|
| Surface to 6-in. Layer                   |             |             |       |                 |                 | 6- to 12-in. Layer     |             |             |       |                 |                 |
| Days<br>Deple-<br>tion                   | Summer      |             |       | Trans.<br>Depl. | Winter<br>Depl. | Days<br>Deple-<br>tion | Summer      |             |       | Trans.<br>Depl. | Winter<br>Depl. |
|  | Avg<br>Loss | Adj<br>Loss | Depl. |                 |                 |                        | Avg<br>Loss | Adj<br>Loss | Depl. |                 |                 |
| 0  | -----       | -----       | 2.50  | 2.50            | 2.50            | 0                      | -----       | -----       | 2.70  | 2.70            | 2.70            |
| 1  | 0.15        | 0.14        | 2.36  | 2.41            | 2.45            | 1                      | 0.11        | 0.11        | 2.59  | 2.65            | 2.67            |
| 2  | 0.29        | 0.26        | 2.24  | 2.33            | 2.41            | 2                      | 0.21        | 0.21        | 2.49  | 2.61            | 2.65            |
| 3  | 0.40        | 0.36        | 2.14  | 2.28            | 2.38            | 3                      | 0.28        | 0.27        | 2.43  | 2.57            | 2.63            |
| 4  | 0.51        | 0.46        | 2.04  | 2.23            | 2.35            | 4                      | 0.35        | 0.34        | 2.36  | 2.54            | 2.61            |
| 5  | 0.61        | 0.55        | 1.95  | 2.18            | 2.32            | 5                      | 0.41        | 0.40        | 2.30  | 2.51            | 2.59            |
| 6  | 0.69        | 0.63        | 1.87  | 2.13            | 2.29            | 6                      | 0.47        | 0.46        | 2.24  | 2.48            | 2.57            |
| 7  | 0.77        | 0.70        | 1.80  | 2.09            | 2.26            | 7                      | 0.53        | 0.52        | 2.18  | 2.45            | 2.56            |
| 8  | 0.85        | 0.77        | 1.73  | 2.05            | 2.23            | 8                      | 0.59        | 0.58        | 2.12  | 2.42            | 2.55            |
| 9  | 0.92        | 0.84        | 1.66  | 2.02            | 2.21            | 9                      | 0.65        | 0.64        | 2.06  | 2.39            | 2.54            |
| 10                                       | 1.00        | 0.91        | 1.59  | 1.98            | 2.19            | 10                     | 0.71        | 0.70        | 2.00  | 2.36            | 2.53            |
| 11                                       | 1.08        | 0.98        | 1.52  | 1.95            | 2.17            | 11                     | 0.76        | 0.75        | 1.95  | 2.33            | 2.52            |
| 12                                       | 1.16        | 1.05        | 1.45  | 1.91            | 2.16            | 12                     | 0.81        | 0.80        | 1.90  | 2.30            | 2.51            |
| 13                                       | 1.23        | 1.12        | 1.38  | 1.88            | 2.15            | 13                     | 0.86        | 0.84        | 1.86  | 2.27            | 2.50            |
| 14                                       | 1.30        | 1.18        | 1.32  | 1.84            | 2.14            | 14                     | 0.91        | 0.89        | 1.81  | 2.24            | 2.49            |
| 15                                       | 1.37        | 1.25        | 1.25  | 1.81            | 2.13            | 15                     | 0.96        | 0.94        | 1.76  | 2.22            | 2.48            |
| 16                                       | 1.43        | 1.30        | 1.20  | 1.77            | 2.12            | 16                     | 1.01        | 0.99        | 1.71  | 2.19            | 2.47            |
| 17                                       | 1.48        | 1.35        | 1.15  | 1.74            | 2.11            | 17                     | 1.06        | 1.04        | 1.66  | 2.16            | 2.46            |
| 18                                       | 1.53        | 1.39        | 1.11  | 1.70            | 2.10            | 18                     | 1.11        | 1.09        | 1.61  | 2.14            | 2.46            |
| 19                                       | 1.57        | 1.43        | 1.07  | 1.67            | 2.09            | 19                     | 1.15        | 1.13        | 1.57  | 2.11            | 2.45            |
| 20                                       | 1.61        | 1.46        | 1.04  | 1.65            | 2.09            | 20                     | 1.19        | 1.17        | 1.53  | 2.09            | 2.45            |
| 21                                       | 1.64        | 1.49        | 1.01  | 1.62            | 2.09            | 21                     | 1.22        | 1.20        | 1.50  | 2.06            | 2.44            |
| 22                                       | 1.66        | 1.51        | 0.99  | 1.60            | 2.09            | 22                     | 1.25        | 1.23        | 1.47  | 2.04            | 2.44            |
| 23                                       | 1.68        | 1.53        | 0.97  | 1.57            | 2.09            | 23                     | 1.28        | 1.26        | 1.44  | 2.01            | 2.43            |
| 24                                       | 1.70        | 1.55        | 0.95  | 1.55            | 2.09            | 24                     | 1.31        | 1.29        | 1.41  | 1.99            | 2.43            |
| 25                                       | 1.72        | 1.56        | 0.94  | 1.53            | 2.08            | 25                     | 1.34        | 1.32        | 1.38  | 1.96            | 2.42            |
| 26                                       | 1.74        | 1.58        | 0.92  | 1.50            | 2.08            | 26                     | 1.37        | 1.35        | 1.35  | 1.94            | 2.42            |
| 27                                       | 1.76        | 1.60        | 0.90  | 1.48            | 2.08            | 27                     | 1.40        | 1.37        | 1.33  | 1.91            | 2.42            |
| 28                                       | 1.78        | 1.62        | 0.88  | 1.46            | 2.08            | 28                     | 1.42        | 1.39        | 1.31  | 1.89            | 2.41            |
| 29                                       | 1.80        | 1.64        | 0.86  | 1.44            | 2.08            | 29                     | 1.44        | 1.41        | 1.29  | 1.87            | 2.41            |
| 30                                       | 1.82        | 1.65        | 0.85  | 1.42            | 2.08            | 30                     | 1.46        | 1.43        | 1.27  | 1.85            | 2.41            |
| 35                                       | 1.84        | 1.67        | 0.83  | 1.36            |                 | 35                     | 1.52        | 1.49        | 1.21  | 1.75            | 2.40            |
| 40                                       | 1.86        | 1.69        | 0.81  | 1.30            |                 | 40                     | 1.57        | 1.54        | 1.16  | 1.67            | 2.40            |
| 45                                       | 1.86        | 1.69        | 0.81  | 1.25            |                 | 45                     | 1.59        | 1.56        | 1.14  | 1.63            |                 |
| 50                                       | 1.87        | 1.70        | 0.80  | 1.20            |                 | 50                     | 1.61        | 1.58        | 1.12  | 1.60            |                 |
|  |             |             |       |                 |                 | 55                     | 1.62        | 1.59        | 1.11  |                 |                 |
|  |             |             |       |                 |                 | 60                     | 1.63        | 1.60        | 1.10  |                 |                 |

Fig. A2. Depletion tabulation for site 246, Holly Springs, Mississippi

are explained in paragraph 13 (page A10) which describes the use of tables A5, A6, and A7.

4. In this example, prediction begins in the winter period, on March 2, 1954, when moisture contents were determined by sampling. These values are entered on line 1, column 8, of fig. A1.

5. The Holly Springs weather substation record shows that the first



storm of the period, a 0.39-in. rain, occurred on March 3. The moisture content values of 2.32 and 2.60 in., for March 2, the day before the storm, are repeated in column 4, line 2, and are now subtracted from the field-maximum moisture contents of 2.50 and 2.70 in., found in box 2. The remainders are values of available storage and are entered in column 5. Since the 0.39-in. rainfall of March 3, column 2, line 2, is greater than the total available storage of 0.28 in. for the two layers, the storm is considered to give a Class II accretion, which is entered in column 6, line 2.

6. From Class II accretion relations (table A4) and opposite available storages of 0.18 and 0.10 in., accretions may be read as 0.09 and 0.04 in. for the upper and lower layers, respectively. These values are entered in column 7 on line 2 of the prediction form under the proper layer designations. These amounts are now added to the moisture contents of the soil on March 2 and which are noted in column 4. Adding 0.09 and 2.32 in. brings the moisture content up to 2.41 in. for the surface to 6-in. layer. This is entered in column 8. Similarly, the 0.04-in. accretion is added to the 2.60 in. noted in column 4, and the total of 2.64 in. for the 6- to 12-in. layer is also entered in column 8.

7. March 17 is the first day of the spring period (box 3 of fig. A1). No rainfall occurred for the 13 days between March 3 and March 17. This is entered in column 3, "Days of Depletion." The 13 days are March 4 to 16, inclusive; no depletion is included for March 3, a day of rainfall, nor for March 17, which is included in the subsequent period of transition depletion. Moisture contents or moisture depletions for the period March 3 to March 17 are read from the winter depletion columns in fig. A2. The 2.41 value is located in the winter column for the surface to 6-in. layer. From that point, the value is depleted down the column for 13 days (the interstorm period), to the value of 2.13 in. Similarly, in the 6- to 12-in. layer, under the winter column of fig. A2, the value 2.64 (which actually would lie halfway between 2.63 and 2.65 on the figure) is depleted down the column for 13 days where, again interpolating between two figures, the value 2.47 in. is found.

8. The second storm of the period, a 0.31-in. rain, occurred on March 19, two days after the beginning of the spring period. Depletions



for these two days, March 17 and 18, are read from the "Transition" columns of fig. A2, by entering the table at the 2.13 and 2.47 values and reading down two days, giving predicted moisture-content values of 2.05 and 2.41 in. for the surface to 6-in. and 6- to 12-in. layers on March 18 before the storm. These values are entered in column 4, line 4, in fig. A1. These are subtracted from the field-maximum moisture contents to get available storage of 0.45 and 0.29 in. for the two layers (see column 5, line 4). The total available storage is now 0.74 (0.45 plus 0.29) which is greater than the rainfall of 0.31 in. that occurred on March 19 (column 2, line 4) so this storm is considered to give a Class I accretion and that fact is noted in column 6, line 4. From Class I average accretion relations, table A3, at 0.31-in. rainfall, accretions are 0.14 and 0.06 in. for the two layers, respectively, and these are entered in column 7, line 4. These values are added to the moisture content before the storm to give the predicted content of 2.19 and 2.47 in. for the two layers on March 19.

9. The storms that followed on March 23 and 26 are handled in a similar manner. The predicted values derived for March 26 are 2.23 and 2.43 in. This is noted in column 8, line 7. On that date actual measurements were made to check the prediction system. Measured moisture contents proved to be 2.42 for the surface to 6-in. layer and 2.60 for the 6- to 12-in. layer; these values are noted in column 9. By subtraction, it is calculated that the deviations between predicted and measured soil moisture are 0.19 for the surface to 6-in. layer and 0.17 for the 6- to 12-in. layer. This method is followed throughout the year for a given site.

10. This sample demonstrates how a prediction is made and how tables of averages may be applied to a site to give a reasonable prediction of the moisture content. If rainfall records taken at the site had been used instead of records from the nearest Weather Bureau Station, and if relations derived specially for that site had been used, the deviation of measured from calculated moisture content would have been much less.

11. If this particular site had been on a wet area or an area with a reasonably large amount of organic matter, the deviations between predicted and actual might have been much larger. Also, if these predictions had been made for an area that, at the time, was thawing or partially frozen, or had an underlying layer of frozen ground, the deviations



between measured and predicted would probably have been much larger.

Tables for Approximating Field-maximum and -minimum  
Moisture Contents, Transition Dates, and Accretion Values

12. The tables of tentative average relations for field-maximum and -minimum moisture contents, transition dates, and values for Class I and II accretions, with explanations of their application, follow. A minimum-size storm of 0.10 in. is used. Studies presently under way are designed to improve the tables, thus making predicted and measured values much closer. It is also entirely probable that additional tables will have to be constructed and modifications made in procedures for specific situations such as wet soils, or intermittently frozen soils, so that less deviation will occur.

Table A1  
Equations for Approximating Field-maximum  
and -minimum Soil-moisture Contents

FIELD MAXIMUM, IN.

Without 0.06-atm tension values

$$\text{Surface to 6-in. layer} = +2.06 - 0.011 S + 0.116 OM + 0.151 WI \quad (1)$$

$$6\text{- to 12-in. layer} = +2.06 - 0.012 S + 0.008 C + 0.155 WI \quad (2)$$

With 0.06-atm tension values

$$\text{Surface to 6-in. layer} = -0.31 + 1.042 T \quad (3)$$

$$\text{Surface to 6-in. layer} = +0.68 - 0.006 S + 0.077 WI + 0.737 T \quad (4)$$

$$6\text{- to 12-in. layer} = +0.20 + 0.897 T \quad (5)$$

$$6\text{- to 12-in. layer} = +0.83 - 0.006 S + 0.007 C + 0.134 WI + 0.492 T \quad (6)$$

FIELD MINIMUM, IN.

$$\text{Surface to 6-in. layer} = -0.013 + 0.007 C + 0.074 OM + 0.149 WI \quad (7)$$

$$6\text{- to 12-in. layer} = +0.131 + 0.017 C + 0.044 OM + 0.119 WI \quad (8)$$

Note: S = sand, %                      WI = wetness index  
C = clay, %                      T = moisture content, in./6 in. of soil,  
OM = organic matter, %                      at 0.06-atm tension

In order to approximate the field-maximum and -minimum values from equations 1-8, knowledge of soil texture, organic content, and site wetness index is needed. Measurements of these properties can be obtained from soil samples and observations made at the site, or estimates can be made from previous surveys or maps.

To solve the equations, multiply the value of each soil property by the proper coefficient in the equations. Use per cent as a whole number: 5% is 5, not 0.05. Add the products and the equation constant algebraically. Note that the sand products and one of the constants are negative. Round the results to the nearest tenth of an inch.

If the estimated field maximum exceeds the total pore space derived from bulk density and specific gravity, the total pore space is used for the maximum.



Table A2

Average Transition Dates for Various Regions in the United States

| Region   | Latitude<br>deg | Transition Date<br>(First Day of Season) |        |        |        |
|--|-----------------|--|--------|--------|--------|
|  |                 | Spring                                   | Summer | Autumn | Winter |
| Southern   | 32              | 3/10                                     | 5/10   | 10/15  | 12/1   |
|  | 34              | 3/17                                     | 5/10   | 10/15  | 12/1   |
| Lake states  | 42              | 4/15                                     | 5/10   | 10/18  | 11/15  |
|  | 44              | 4/20                                     | 5/18   | 10/10  | 11/1   |
|  | 46              | 4/30                                     | 5/25   | 9/22   | 11/1   |
| Intermountain  |                 |  |        |        |        |
| 4500-ft elevation  | 38              | 4/17                                     | 5/28   | 9/26   | 11/7   |
|  | 41              | 4/20                                     | 6/1    | 9/20   | 11/1   |
|  | 43              | 4/23                                     | 6/5    | 9/17   | 10/28  |
|  | 46              | 5/13                                     | 6/11   | 9/8    | 10/18  |
| 7000-ft elevation  | 38              | 5/14                                     | 6/12   | 9/10   | 10/20  |
|  | 41              | 5/14                                     | 6/10   | 9/12   | 10/25  |
|  | 43              | 5/14                                     | 6/10   | 9/10   | 10/20  |
| Northeastern   |                 |  |        |        |        |
| Pennsylvania, New York, Connecticut, Massachusetts, New Hampshire, Vermont |                 | 5/1                                      | 5/15   | 9/15   | 11/15  |
|  |                 | 5/1                                      | 5/20   | 9/15   | 11/15  |

Note: Selection of transition dates is based on previous observations of and information concerning a site and current observations of the area under consideration. The dates listed above were determined from observations made during 1954-1955 over various regions, and can be used as a guide in the selection of dates. Observation of vegetative development is needed to help select the spring date.



Table A3  
Average Accretion Values for All Sites, Inches of Water  
Class I Accretions

| Surface to 6-in. Layer |      |             |      |             |      | 6- to 12-in. Layer |      |             |      |             |      |
|------------------------|------|-------------|------|-------------|------|--------------------|------|-------------|------|-------------|------|
| Pre-<br>cip            | Accr | Pre-<br>cip | Accr | Pre-<br>cip | Accr | Pre-<br>cip        | Accr | Pre-<br>cip | Accr | Pre-<br>cip | Accr |
| 0.10                   | 0.04 | 0.60        | 0.27 | 1.10        | 0.51 | 0.10               | 0.01 | 0.60        | 0.12 | 1.10        | 0.23 |
| 0.12                   | 0.05 | 0.62        | 0.28 | 1.12        | 0.52 | 0.12               | 0.02 | 0.62        | 0.13 | 1.12        | 0.24 |
| 0.14                   | 0.06 | 0.64        | 0.29 | 1.14        | 0.53 | 0.14               | 0.02 | 0.64        | 0.13 | 1.14        | 0.24 |
| 0.16                   | 0.07 | 0.66        | 0.30 | 1.16        | 0.54 | 0.16               | 0.03 | 0.66        | 0.14 | 1.16        | 0.25 |
| 0.18                   | 0.07 | 0.68        | 0.31 | 1.18        | 0.54 | 0.18               | 0.03 | 0.68        | 0.14 | 1.18        | 0.25 |
|                        |      |             |      |             |      |                    |      |             |      |             |      |
| 0.20                   | 0.08 | 0.70        | 0.32 | 1.20        | 0.55 | 0.20               | 0.03 | 0.70        | 0.14 | 1.20        | 0.25 |
| 0.22                   | 0.09 | 0.72        | 0.33 | 1.22        | 0.56 | 0.22               | 0.04 | 0.72        | 0.15 | 1.22        | 0.26 |
| 0.24                   | 0.10 | 0.74        | 0.34 | 1.24        | 0.57 | 0.24               | 0.04 | 0.74        | 0.15 | 1.24        | 0.26 |
| 0.26                   | 0.11 | 0.76        | 0.35 | 1.26        | 0.58 | 0.26               | 0.05 | 0.76        | 0.16 | 1.26        | 0.27 |
| 0.28                   | 0.12 | 0.78        | 0.36 | 1.28        | 0.59 | 0.28               | 0.05 | 0.78        | 0.16 | 1.28        | 0.27 |
|                        |      |             |      |             |      |                    |      |             |      |             |      |
| 0.30                   | 0.13 | 0.80        | 0.37 | 1.30        | 0.60 | 0.30               | 0.06 | 0.80        | 0.17 | 1.30        | 0.28 |
| 0.32                   | 0.14 | 0.82        | 0.38 | 1.32        | 0.61 | 0.32               | 0.06 | 0.82        | 0.17 | 1.32        | 0.28 |
| 0.34                   | 0.15 | 0.84        | 0.38 | 1.34        | 0.62 | 0.34               | 0.06 | 0.84        | 0.17 | 1.34        | 0.28 |
| 0.36                   | 0.16 | 0.86        | 0.39 | 1.36        | 0.63 | 0.36               | 0.07 | 0.86        | 0.18 | 1.36        | 0.29 |
| 0.38                   | 0.17 | 0.88        | 0.40 | 1.38        | 0.64 | 0.38               | 0.07 | 0.88        | 0.18 | 1.38        | 0.29 |
|                        |      |             |      |             |      |                    |      |             |      |             |      |
| 0.40                   | 0.18 | 0.90        | 0.41 | 1.40        | 0.65 | 0.40               | 0.08 | 0.90        | 0.19 | 1.40        | 0.30 |
| 0.42                   | 0.19 | 0.92        | 0.42 | 1.42        | 0.66 | 0.42               | 0.08 | 0.92        | 0.19 | 1.42        | 0.30 |
| 0.44                   | 0.20 | 0.94        | 0.43 | 1.44        | 0.67 | 0.44               | 0.09 | 0.94        | 0.20 | 1.44        | 0.31 |
| 0.46                   | 0.21 | 0.96        | 0.44 | 1.46        | 0.68 | 0.46               | 0.09 | 0.96        | 0.20 | 1.46        | 0.31 |
| 0.48                   | 0.22 | 0.98        | 0.45 | 1.48        | 0.69 | 0.48               | 0.10 | 0.98        | 0.21 | 1.48        | 0.32 |
|                        |      |             |      |             |      |                    |      |             |      |             |      |
| 0.50                   | 0.23 | 1.00        | 0.46 | 1.50        | 0.69 | 0.50               | 0.10 | 1.00        | 0.21 | 1.50        | 0.32 |
| 0.52                   | 0.23 | 1.02        | 0.47 | 1.52        | 0.70 | 0.52               | 0.10 | 1.02        | 0.21 | 1.52        | 0.32 |
| 0.54                   | 0.24 | 1.04        | 0.48 | 1.54        | 0.71 | 0.54               | 0.11 | 1.04        | 0.22 | 1.54        | 0.33 |
| 0.56                   | 0.25 | 1.06        | 0.49 | 1.56        | 0.72 | 0.56               | 0.11 | 1.06        | 0.22 | 1.56        | 0.33 |
| 0.58                   | 0.26 | 1.08        | 0.50 | 1.58        | 0.73 | 0.58               | 0.12 | 1.08        | 0.23 | 1.58        | 0.34 |

$$\hat{Y} = 0.47 X - 0.01$$

$$\hat{Y} = 0.22 X - 0.01$$

where  $\hat{Y}$  = predicted accretion

X = rainfall

Note: This table is used if the amount of rainfall is less than the amount of available storage in the surface to 12-in. layer. Do not use rainfall less than the minimum-size storm of 0.10 in. The formulas at the end of the tabulation are for use when precipitation exceeds the values in the table. This table can be used for all sites regardless of soil, vegetation, climate, or topography.



Table A4  
Average Accretion Values for All Sites, Inches of Water  
Class II Accretions

| Surface to 6-in. Layer |      |                |      |                |      | 6- to 12-in. Layer |      |                |      |                |      |
|------------------------|------|----------------|------|----------------|------|--------------------|------|----------------|------|----------------|------|
| Avail.<br>Stor         | Accr | Avail.<br>Stor | Accr | Avail.<br>Stor | Accr | Avail.<br>Stor     | Accr | Avail.<br>Stor | Accr | Avail.<br>Stor | Accr |
|                        |      | 0.50           | 0.33 | 1.00           | 0.70 |                    |      | 0.50           | 0.28 | 1.00           | 0.58 |
| 0.02                   | 0.01 | 0.52           | 0.34 | 1.02           | 0.71 | 0.02               | 0.01 | 0.52           | 0.29 | 1.02           | 0.59 |
| 0.04                   | 0.01 | 0.54           | 0.35 | 1.04           | 0.73 | 0.04               | 0.01 | 0.54           | 0.30 | 1.04           | 0.60 |
| 0.06                   | 0.01 | 0.56           | 0.37 | 1.06           | 0.75 | 0.06               | 0.02 | 0.56           | 0.32 | 1.06           | 0.62 |
| 0.08                   | 0.01 | 0.58           | 0.39 | 1.08           | 0.76 | 0.08               | 0.03 | 0.58           | 0.33 | 1.08           | 0.63 |
| 0.10                   | 0.03 | 0.60           | 0.40 | 1.10           | 0.77 | 0.10               | 0.04 | 0.60           | 0.34 | 1.10           | 0.64 |
| 0.12                   | 0.04 | 0.62           | 0.41 | 1.12           | 0.79 | 0.12               | 0.05 | 0.62           | 0.35 | 1.12           | 0.65 |
| 0.14                   | 0.05 | 0.64           | 0.43 | 1.14           | 0.81 | 0.14               | 0.06 | 0.64           | 0.36 | 1.14           | 0.66 |
| 0.16                   | 0.07 | 0.66           | 0.45 | 1.16           | 0.82 | 0.16               | 0.08 | 0.66           | 0.38 | 1.16           | 0.68 |
| 0.18                   | 0.09 | 0.68           | 0.46 | 1.18           | 0.83 | 0.18               | 0.09 | 0.68           | 0.39 | 1.18           | 0.69 |
| 0.20                   | 0.10 | 0.70           | 0.47 | 1.20           | 0.85 | 0.20               | 0.10 | 0.70           | 0.40 | 1.20           | 0.70 |
| 0.22                   | 0.11 | 0.72           | 0.49 | 1.22           | 0.87 | 0.22               | 0.11 | 0.72           | 0.41 | 1.22           | 0.71 |
| 0.24                   | 0.13 | 0.74           | 0.51 | 1.24           | 0.88 | 0.24               | 0.12 | 0.74           | 0.42 | 1.24           | 0.72 |
| 0.26                   | 0.15 | 0.76           | 0.52 | 1.26           | 0.89 | 0.26               | 0.14 | 0.76           | 0.44 | 1.26           | 0.74 |
| 0.28                   | 0.16 | 0.78           | 0.53 | 1.28           | 0.91 | 0.28               | 0.15 | 0.78           | 0.45 | 1.28           | 0.75 |
| 0.30                   | 0.17 | 0.80           | 0.55 | 1.30           | 0.93 | 0.30               | 0.16 | 0.80           | 0.46 | 1.30           | 0.76 |
| 0.32                   | 0.19 | 0.82           | 0.57 | 1.32           | 0.94 | 0.32               | 0.17 | 0.82           | 0.47 | 1.32           | 0.77 |
| 0.34                   | 0.21 | 0.84           | 0.58 | 1.34           | 0.95 | 0.34               | 0.18 | 0.84           | 0.48 | 1.34           | 0.78 |
| 0.36                   | 0.22 | 0.86           | 0.59 | 1.36           | 0.97 | 0.36               | 0.20 | 0.86           | 0.50 | 1.36           | 0.80 |
| 0.38                   | 0.23 | 0.88           | 0.61 | 1.38           | 0.99 | 0.38               | 0.21 | 0.88           | 0.51 | 1.38           | 0.81 |
| 0.40                   | 0.25 | 0.90           | 0.63 | 1.40           | 1.00 | 0.40               | 0.22 | 0.90           | 0.52 | 1.40           | 0.82 |
| 0.42                   | 0.27 | 0.92           | 0.64 | 1.42           | 1.01 | 0.42               | 0.23 | 0.92           | 0.53 | 1.42           | 0.83 |
| 0.44                   | 0.28 | 0.94           | 0.65 | 1.44           | 1.03 | 0.44               | 0.24 | 0.94           | 0.54 | 1.44           | 0.84 |
| 0.46                   | 0.29 | 0.96           | 0.67 | 1.46           | 1.05 | 0.46               | 0.26 | 0.96           | 0.56 | 1.46           | 0.86 |
| 0.48                   | 0.31 | 0.98           | 0.69 | 1.48           | 1.06 | 0.48               | 0.27 | 0.98           | 0.57 | 1.48           | 0.87 |

$$\hat{Y} = 0.75 Z - 0.05$$

$$\hat{Y} = 0.60 Z - 0.02$$

where  $\hat{Y}$  = predicted accretion

Z = available storage at start of the storm

Note: This table is used if the amount of rainfall equals or exceeds the amount of available storage in the surface to 12-in. layer. Do not use rainfall less than the minimum-size storm of 0.10 in. The formulas at the end of the tabulation are for use when available storage exceeds the values in the table. This table can be used for all sites regardless of soil, vegetation, climate, or topography.



Tables for Determining Depletion Relations

13. Average depletion by textural groupings (sand soils, silt soils, and clay soils) are determined from the following tabulations. Winter and transition curves were converted to tables in terms of actual moisture content by textural groupings and layer for a range of field maxima, table A7. Soils are classed in three general textural groupings based on the United States Department of Agriculture classification system. Clay soils include all soils with clay in the textural class name, such as sandy clay loam, or silty clay. Silt soils include the silt loams and silts. Sand soils include the sands, sandy loams, and loams. For each site and depth the proper columns are selected for direct use in prediction of depletion. Note that depletion is used to the nearest hundredth of an inch, whereas the field maximum is used to the nearest tenth. If the predicted field maximum is beyond the table, a new column must be computed from the tabulation of average moisture loss values, tables 2 and 3 in the main text.

14. Summer depletion has to be adjusted if the moisture range from the approximated maximum to minimum differs from the total moisture loss as listed for the average summer curves in table A5. Adjustment is made by direct proportion, multiplying the average loss values by a factor to get adjusted values. The factors are selected from the table of factors for adjusting summer moisture loss values, table A6, considering the difference between the approximated maximum and minimum. The adjusted summer moisture loss values are subtracted from the approximated field maximum to give the average depletion rate tabulation for summer similar to table A7 for transition and winter.

15. These computations are demonstrated in fig. A2, utilizing information from fig. A1 and tables A5 and A6. In box 4 of fig. A1, the soil depths are listed as silt loams. On the basis of textural groups of each depth, the summer average loss values are copied from the entries for silt soils in table A5 to the average loss columns of fig. A2. The factors shown in box 4, fig. A1, were selected from table A6 considering the difference between the approximated field maximum and minimum shown in box 2, fig. A1. The average loss values are multiplied by the factor and recorded in the adjusted loss column for each depth in fig. A2. The adjusted loss



values are then subtracted from the field maximum and the answer recorded in the depletion column for each depth.

16. The transition and winter depletion tabulations can be copied into designated columns of fig. A2 so that all depletion tabulations for a site will occur on one sheet. If transition depletion exceeds the summer depletion, use the summer values starting on the day the two moisture contents converge.

Table A5

Average Accumulative Moisture Loss in Inches of Water  
from Field Maximum for Summer Season

| Days | Surface to 6-in. Layer |            |            | 6- to 12-in. Layer |            |            |
|------|------------------------|------------|------------|--------------------|------------|------------|
|      | Sand Soils             | Silt Soils | Clay Soils | Sand Soils         | Silt Soils | Clay Soils |
| 0    | 0                      | 0          | 0          | 0                  | 0          | 0          |
| 1    | 0.15                   | 0.15       | 0.17       | 0.12               | 0.11       | 0.14       |
| 2    | 0.30                   | 0.29       | 0.33       | 0.24               | 0.21       | 0.27       |
| 3    | 0.39                   | 0.40       | 0.46       | 0.29               | 0.28       | 0.34       |
| 4    | 0.48                   | 0.51       | 0.59       | 0.34               | 0.35       | 0.40       |
| 5    | 0.56                   | 0.61       | 0.71       | 0.38               | 0.41       | 0.46       |
| 6    | 0.62                   | 0.69       | 0.79       | 0.42               | 0.47       | 0.52       |
| 7    | 0.68                   | 0.77       | 0.87       | 0.46               | 0.53       | 0.58       |
| 8    | 0.73                   | 0.85       | 0.95       | 0.50               | 0.59       | 0.63       |
| 9    | 0.78                   | 0.92       | 1.03       | 0.54               | 0.65       | 0.69       |
| 10   | 0.83                   | 1.00       | 1.10       | 0.57               | 0.71       | 0.74       |
| 11   | 0.87                   | 1.08       | 1.14       | 0.60               | 0.76       | 0.77       |
| 12   | 0.91                   | 1.16       | 1.18       | 0.63               | 0.81       | 0.80       |
| 13   | 0.95                   | 1.23       | 1.22       | 0.66               | 0.86       | 0.83       |
| 14   | 0.98                   | 1.30       | 1.26       | 0.69               | 0.91       | 0.86       |
| 15   | 1.01                   | 1.37       | 1.29       | 0.72               | 0.96       | 0.89       |
| 16   | 1.04                   | 1.43       | 1.31       | 0.74               | 1.01       | 0.91       |
| 17   | 1.07                   | 1.48       | 1.33       | 0.76               | 1.06       | 0.93       |
| 18   | 1.09                   | 1.53       | 1.34       | 0.78               | 1.11       | 0.95       |
| 19   | 1.11                   | 1.57       | 1.35       | 0.80               | 1.15       | 0.97       |
| 20   | 1.13                   | 1.61       | 1.36       | 0.82               | 1.19       | 0.98       |
| 21   | 1.14                   | 1.64       | 1.37       | 0.84               | 1.22       | 0.99       |
| 22   | 1.15                   | 1.66       | 1.38       | 0.86               | 1.25       | 1.00       |
| 23   | 1.16                   | 1.68       | 1.39       | 0.88               | 1.28       | 1.01       |
| 24   | 1.17                   | 1.70       | 1.40       | 0.90               | 1.31       | 1.02       |
| 25   | 1.18                   | 1.72       | 1.41       | 0.92               | 1.34       | 1.03       |
| 26   | 1.19                   | 1.74       | 1.42       | 0.93               | 1.37       | 1.04       |
| 27   | 1.20                   | 1.76       | 1.43       | 0.94               | 1.40       | 1.04       |
| 28   | 1.21                   | 1.78       | 1.43       | 0.95               | 1.42       | 1.05       |
| 29   | 1.22                   | 1.80       | 1.44       | 0.96               | 1.44       | 1.05       |
| 30   | 1.23                   | 1.82       | 1.44       | 0.97               | 1.46       | 1.06       |
| 35   | 1.24                   | 1.84       | 1.46       | 0.98               | 1.52       | 1.07       |
| 40   | 1.25                   | 1.86       | 1.47       | 0.99               | 1.57       | 1.08       |
| 45   | 1.25                   | 1.86       |            | 0.99               | 1.59       |            |
| 50   | 1.26                   | 1.87       |            | 1.00               | 1.61       |            |
| 55   |                        |            |            |                    | 1.62       |            |
| 60   |                        |            |            |                    | 1.63       |            |



Table A6

Factors for Adjusting Average Summer Loss  
to Estimated Summer Loss Values

| Calculated Total<br>Possible Moisture<br>Loss (Max - Min)<br>in. of Water | Factor            |               |               |                    |               |               |
|---|-------------------|---------------|---------------|--------------------|---------------|---------------|
|   | 0- to 6-in. Layer |               |               | 6- to 12-in. Layer |               |               |
|   | Sand<br>Soils     | Silt<br>Soils | Clay<br>Soils | Sand<br>Soils      | Silt<br>Soils | Clay<br>Soils |
| 0.50  | 0.397             | 0.267         | 0.340         | 0.500              | 0.307         | 0.463         |
| 0.60  | 0.476             | 0.321         | 0.408         | 0.600              | 0.368         | 0.556         |
| 0.70  | 0.556             | 0.374         | 0.476         | 0.700              | 0.429         | 0.648         |
| 0.80  | 0.635             | 0.428         | 0.544         | 0.800              | 0.491         | 0.741         |
| 0.90  | 0.714             | 0.481         | 0.612         | 0.900              | 0.552         | 0.833         |
| 1.00  | 0.794             | 0.535         | 0.680         | 1.000              | 0.613         | 0.926         |
| 1.10  | 0.873             | 0.588         | 0.748         | 1.100              | 0.675         | 1.018         |
| 1.20  | 0.952             | 0.642         | 0.816         | 1.200              | 0.736         | 1.111         |
| 1.30  | 1.032             | 0.695         | 0.884         | 1.300              | 0.798         | 1.204         |
| 1.40  | 1.111             | 0.749         | 0.952         | 1.400              | 0.859         | 1.296         |
| 1.50  | 1.190             | 0.802         | 1.020         | 1.500              | 0.920         | 1.389         |
| 1.60  | 1.270             | 0.856         | 1.088         | 1.600              | 0.982         | 1.481         |
| 1.70  | 1.349             | 0.909         | 1.157         | 1.700              | 1.043         | 1.574         |
| 1.80  | 1.428             | 0.963         | 1.225         | 1.800              | 1.104         | 1.667         |
| 1.90  | 1.508             | 1.016         | 1.293         | 1.900              | 1.166         | 1.759         |
| 2.00  | 1.587             | 1.070         | 1.361         | 2.000              | 1.227         | 1.852         |
| 2.10  | 1.667             | 1.123         | 1.429         | 2.100              | 1.288         | 1.944         |
| 2.20  | 1.746             | 1.177         | 1.497         | 2.200              | 1.350         | 2.037         |
| 2.30  | 1.825             | 1.230         | 1.565         | 2.300              | 1.411         | 2.130         |
| 2.40  | 1.905             | 1.284         | 1.633         | 2.400              | 1.472         | 2.222         |
| 2.50  | 1.984             | 1.337         | 1.701         | 2.500              | 1.534         | 2.315         |
| 2.60  | 2.063             | 1.390         | 1.769         | 2.600              | 1.595         | 2.407         |
| 2.70  | 2.143             | 1.444         | 1.837         | 2.700              | 1.656         | 2.500         |
| 2.80  | 2.222             | 1.497         | 1.905         | 2.800              | 1.718         | 2.593         |
| 2.90  | 2.301             | 1.551         | 1.973         | 2.900              | 1.779         | 2.685         |
| 3.00  | 2.381             | 1.604         | 2.041         | 3.000              | 1.840         | 2.778         |



Table A7

## Average Depletion Rates, in. of Water by Depth, Season, and Textural Group

| Days<br>Deple-<br>tion                            | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|---|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0   | 1.20                                | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 |
| 0- to 6-in. Layer, Transition (Spring and Autumn) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| Sand Soils  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1   | 1.11                                | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 |
| 2   | 1.03                                | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 |
| 3   | 0.97                                | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 |
| 4   | 0.92                                | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 |
| 5   | 0.87                                | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 |
| 6   | 0.83                                | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 |
| 7   | 0.79                                | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 |
| 8   | 0.75                                | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 |
| 9   | 0.71                                | 0.81 | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 |
| 10  | 0.68                                | 0.78 | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 |
| 11  | 0.64                                | 0.74 | 0.84 | 0.94 | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 |
| 12  | 0.61                                | 0.71 | 0.81 | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 |
| 13  | 0.58                                | 0.68 | 0.78 | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 |
| 14  | 0.55                                | 0.65 | 0.75 | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 |
| 15  | 0.52                                | 0.62 | 0.72 | 0.82 | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 |
| 16  | 0.49                                | 0.59 | 0.69 | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 |
| 17  | 0.47                                | 0.57 | 0.67 | 0.77 | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 |
| 18  | 0.45                                | 0.55 | 0.65 | 0.75 | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 |
| 19  | 0.43                                | 0.53 | 0.63 | 0.73 | 0.83 | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 |
| 20  | 0.41                                | 0.51 | 0.61 | 0.71 | 0.81 | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 |
| 21  | 0.39                                | 0.49 | 0.59 | 0.69 | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 |
| 22  | 0.37                                | 0.47 | 0.57 | 0.67 | 0.77 | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 |
| 23  | 0.35                                | 0.45 | 0.55 | 0.65 | 0.75 | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 |
| 24  | 0.33                                | 0.43 | 0.53 | 0.63 | 0.73 | 0.83 | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 |
| 25  | 0.32                                | 0.42 | 0.52 | 0.62 | 0.72 | 0.82 | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 |
| 26  | 0.31                                | 0.41 | 0.51 | 0.61 | 0.71 | 0.81 | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 |
| 27  | 0.30                                | 0.40 | 0.50 | 0.60 | 0.70 | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 |
| 28  | 0.29                                | 0.39 | 0.49 | 0.59 | 0.69 | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 |
| 29  | 0.28                                | 0.38 | 0.48 | 0.58 | 0.68 | 0.78 | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 |
| 30  | 0.27                                | 0.37 | 0.47 | 0.57 | 0.67 | 0.77 | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 |
| 35  | 0.23                                | 0.33 | 0.43 | 0.53 | 0.63 | 0.73 | 0.83 | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 |
| 40  | 0.19                                | 0.29 | 0.39 | 0.49 | 0.59 | 0.69 | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 |
| 45  | 0.17                                | 0.27 | 0.37 | 0.47 | 0.57 | 0.67 | 0.77 | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 |
| 50  | 0.15                                | 0.25 | 0.35 | 0.45 | 0.55 | 0.65 | 0.75 | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 |

(Continued)

(1 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion  | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|---|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0   | 1.80                                | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 | 2.90 | 3.00 |
| 0- to 6-in. Layer, Transition (Spring and Autumn) (Continued) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| Silt Soils  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1   | 1.71                                | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 | 2.91 |
| 2   | 1.63                                | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 | 2.83 |
| 3   | 1.58                                | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 | 2.68 | 2.78 |
| 4   | 1.53                                | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 |
| 5   | 1.48                                | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 | 2.68 |
| 6   | 1.43                                | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 |
| 7   | 1.39                                | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 |
| 8   | 1.35                                | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 |
| 9   | 1.32                                | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 |
| 10  | 1.28                                | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 |
| 11  | 1.25                                | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 |
| 12  | 1.21                                | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 |
| 13  | 1.18                                | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 |
| 14  | 1.14                                | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 |
| 15  | 1.11                                | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 |
| 16  | 1.07                                | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 |
| 17  | 1.04                                | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 |
| 18  | 1.00                                | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 |
| 19  | 0.97                                | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 |
| 20  | 0.95                                | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 |
| 21  | 0.92                                | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 |
| 22  | 0.90                                | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 |
| 23  | 0.87                                | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 |
| 24  | 0.85                                | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 |
| 25  | 0.83                                | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 |
| 26  | 0.80                                | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 |
| 27  | 0.78                                | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 |
| 28  | 0.76                                | 0.86 | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 |
| 29  | 0.74                                | 0.84 | 0.94 | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 |
| 30  | 0.72                                | 0.82 | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 |
| 35  | 0.66                                | 0.76 | 0.86 | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 |
| 40  | 0.60                                | 0.70 | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 |
| 45  | 0.55                                | 0.65 | 0.75 | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 |
| 50  | 0.50                                | 0.60 | 0.70 | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 |

(Continued)

(2 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion  | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|---|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0   | 2.00                                | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 | 2.90 | 3.00 | 3.10 | 3.20 |
| 0- to 6-in. Layer, Transition (Spring and Autumn) (Continued) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| Clay Soils  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1   | 1.87                                | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 | 2.87 | 2.97 | 3.07 |
| 2   | 1.74                                | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 | 2.84 | 2.94 |
| 3   | 1.63                                | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 | 2.83 |
| 4   | 1.52                                | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 |
| 5   | 1.41                                | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 |
| 6   | 1.33                                | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 |
| 7   | 1.26                                | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 |
| 8   | 1.19                                | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 |
| 9   | 1.12                                | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 |
| 10  | 1.05                                | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 |
| 11  | 1.00                                | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 |
| 12  | 0.95                                | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 |
| 13  | 0.90                                | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 |
| 14  | 0.85                                | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 |
| 15  | 0.81                                | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 |
| 16  | 0.78                                | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 |
| 17  | 0.76                                | 0.86 | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 |
| 18  | 0.75                                | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 |
| 19  | 0.74                                | 0.84 | 0.94 | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 |
| 20  | 0.73                                | 0.83 | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 |
| 21  | 0.72                                | 0.82 | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 |
| 22  | 0.71                                | 0.81 | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 |
| 23  | 0.70                                | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 |
| 24  | 0.69                                | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 |
| 25  | 0.68                                | 0.78 | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 |
| 26  | 0.67                                | 0.77 | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 |
| 27  | 0.66                                | 0.76 | 0.86 | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 |
| 28  | 0.65                                | 0.75 | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 |
| 29  | 0.64                                | 0.74 | 0.84 | 0.94 | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 |
| 30  | 0.64                                | 0.74 | 0.84 | 0.94 | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 |
| 35  | 0.62                                | 0.72 | 0.82 | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 |
| 40  | 0.60                                | 0.70 | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 |
| 45  | 0.58                                | 0.68 | 0.78 | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 |
| 50  | 0.57                                | 0.67 | 0.77 | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 |

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(3 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion    | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0                         | 1.20                                | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 |
| 0- to 6-in. Layer, Winter |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| Sand Soils                |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1                         | 1.15                                | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 |
| 2                         | 1.10                                | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 |
| 3                         | 1.06                                | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 |
| 4                         | 1.02                                | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 |
| 5                         | 0.98                                | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 |
| 6                         | 0.95                                | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 |
| 7                         | 0.92                                | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 |
| 8                         | 0.90                                | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 |
| 9                         | 0.88                                | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.63 | 1.78 | 1.88 | 1.98 | 2.08 |
| 10                        | 0.86                                | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 |
| 11                        | 0.84                                | 0.94 | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 |
| 12                        | 0.82                                | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 |
| 13                        | 0.80                                | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 |
| 14                        | 0.79                                | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 |
| 15                        | 0.77                                | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 |
| 16                        | 0.76                                | 0.86 | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 |
| 17                        | 0.75                                | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 |
| 18                        | 0.74                                | 0.84 | 0.94 | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 |
| 19                        | 0.73                                | 0.83 | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 |
| 20                        | 0.72                                | 0.82 | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 |
| 21                        | 0.72                                | 0.82 | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 |
| 22                        | 0.71                                | 0.81 | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 |
| 23                        | 0.71                                | 0.81 | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 |
| 24                        | 0.70                                | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 |
| 25                        | 0.70                                | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 |
| 26                        | 0.70                                | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 |
| 27                        | 0.69                                | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 |
| 28                        | 0.69                                | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 |
| 29                        | 0.69                                | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 |
| 30                        | 0.68                                | 0.78 | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 |
| 35                        | 0.67                                | 0.77 | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 |
| 40                        | 0.66                                | 0.76 | 0.86 | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 |

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(4 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion                | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                                       | 0                                   | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 | 2.90 | 3.00 |
| 0- to 6-in. Layer, Winter (Continued) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Silt Soils                            |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1                                     | 1.75                                | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 | 2.95 |      |
| 2                                     | 1.71                                | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 | 2.91 |      |
| 3                                     | 1.68                                | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 | 2.68 | 2.78 | 2.88 |      |
| 4                                     | 1.65                                | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 |      |
| 5                                     | 1.62                                | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 | 2.82 |      |
| 6                                     | 1.59                                | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 | 2.79 |      |
| 7                                     | 1.56                                | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 | 2.66 | 2.76 |      |
| 8                                     | 1.53                                | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 |      |
| 9                                     | 1.51                                | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 |      |
| 10                                    | 1.49                                | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 |      |
| 11                                    | 1.47                                | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 |      |
| 12                                    | 1.46                                | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 | 2.66 |      |
| 13                                    | 1.45                                | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 |      |
| 14                                    | 1.44                                | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 |      |
| 15                                    | 1.43                                | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 |      |
| 16                                    | 1.42                                | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 |      |
| 17                                    | 1.41                                | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 |      |
| 18                                    | 1.40                                | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 |      |
| 19                                    | 1.39                                | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 |      |
| 20                                    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 21                                    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 22                                    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 23                                    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 24                                    | 1.39                                | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 |      |
| 25                                    | 1.38                                | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 |      |
| 26                                    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 27                                    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 28                                    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 29                                    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 30                                    | 1.38                                | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 |      |

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(5 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion                | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
|                                       | 2.00                                | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 | 2.90 | 3.00 | 3.10 | 3.20 |
| 0- to 6-in. Layer, Winter (Continued) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| Clay Soils                            |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1                                     | 1.92                                | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 | 2.82 | 2.92 | 3.02 | 3.12 |
| 2                                     | 1.84                                | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 | 2.84 | 2.94 | 3.04 |
| 3                                     | 1.78                                | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 | 2.68 | 2.78 | 2.88 | 2.98 |
| 4                                     | 1.72                                | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 | 2.82 | 2.92 |
| 5                                     | 1.67                                | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 | 2.87 |
| 6                                     | 1.63                                | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 | 2.83 |
| 7                                     | 1.59                                | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 | 2.79 |
| 8                                     | 1.55                                | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 |
| 9                                     | 1.51                                | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 |
| 10                                    | 1.48                                | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 | 2.68 |
| 11                                    | 1.45                                | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 |
| 12                                    | 1.42                                | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 |
| 13                                    | 1.39                                | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 |
| 14                                    | 1.36                                | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 |
| 15                                    | 1.34                                | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 |
| 16                                    | 1.32                                | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 |
| 17                                    | 1.30                                | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 |
| 18                                    | 1.28                                | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 |
| 19                                    | 1.26                                | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 |
| 20                                    | 1.25                                | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 |
| 21                                    | 1.23                                | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 |
| 22                                    | 1.22                                | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 |
| 23                                    | 1.20                                | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 |
| 24                                    | 1.19                                | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 |
| 25                                    | 1.18                                | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 |
| 26                                    | 1.17                                | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 |
| 27                                    | 1.16                                | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 |
| 28                                    | 1.15                                | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 |
| 29                                    | 1.14                                | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 |
| 30                                    | 1.13                                | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 |
| 35                                    | 1.10                                | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 |
| 40                                    | 1.08                                | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 |

(Continued)

(6 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion                                    | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|---|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0   | 1.20                                | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 |
| <u>6- to 12-in. Layer, Transition (Spring and Autumn)</u> |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| <u>Sand Soils</u>   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1   | 1.13                                | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 |
| 2   | 1.06                                | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 |
| 3   | 1.02                                | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 |
| 4   | 0.98                                | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 |
| 5   | 0.95                                | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 |
| 6   | 0.92                                | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 |
| 7   | 0.90                                | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 |
| 8   | 0.88                                | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 |
| 9   | 0.86                                | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 |
| 10  | 0.84                                | 0.94 | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 |
| 11  | 0.82                                | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 |
| 12  | 0.80                                | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 |
| 13  | 0.78                                | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 |
| 14  | 0.76                                | 0.86 | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 |
| 15  | 0.75                                | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 |
| 16  | 0.73                                | 0.83 | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 |
| 17  | 0.71                                | 0.81 | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 |
| 18  | 0.70                                | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 |
| 19  | 0.69                                | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 |
| 20  | 0.68                                | 0.78 | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 |
| 21  | 0.67                                | 0.77 | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 |
| 22  | 0.66                                | 0.76 | 0.86 | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 |
| 23  | 0.65                                | 0.75 | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 |
| 24  | 0.64                                | 0.74 | 0.84 | 0.94 | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 |
| 25  | 0.63                                | 0.73 | 0.83 | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 |
| 26  | 0.62                                | 0.72 | 0.82 | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 |
| 27  | 0.61                                | 0.71 | 0.81 | 0.91 | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 |
| 28  | 0.60                                | 0.70 | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 |
| 29  | 0.59                                | 0.69 | 0.79 | 0.89 | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 |
| 30  | 0.58                                | 0.68 | 0.78 | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 |
| 35  | 0.55                                | 0.65 | 0.75 | 0.85 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 |
| 40  | 0.52                                | 0.62 | 0.72 | 0.82 | 0.92 | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 |
| 45  | 0.50                                | 0.60 | 0.70 | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 |
| 50  | 0.48                                | 0.58 | 0.68 | 0.78 | 0.88 | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 |

(Continued)

(7 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion   | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0  | 1.80                                | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 | 2.90 | 3.00 |
| 6- to 12-in. Layer, Transition (Spring and Autumn) (Continued) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| Silt Soils   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1  | 1.75                                | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 | 2.95 |
| 2  | 1.71                                | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 | 2.91 |
| 3  | 1.67                                | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 | 2.87 |
| 4  | 1.64                                | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 | 2.84 |
| 5  | 1.61                                | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 |
| 6  | 1.58                                | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 | 2.68 | 2.78 |
| 7  | 1.55                                | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 |
| 8  | 1.52                                | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 |
| 9  | 1.49                                | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 |
| 10   | 1.46                                | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 | 2.66 |
| 11   | 1.43                                | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 |
| 12   | 1.40                                | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 |
| 13   | 1.37                                | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 |
| 14   | 1.34                                | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 |
| 15   | 1.32                                | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 |
| 16   | 1.29                                | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 |
| 17   | 1.26                                | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 |
| 18   | 1.24                                | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 |
| 19   | 1.21                                | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 |
| 20   | 1.19                                | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 |
| 21   | 1.16                                | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 |
| 22   | 1.14                                | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 |
| 23   | 1.11                                | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 |
| 24   | 1.09                                | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 |
| 25   | 1.06                                | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 |
| 26   | 1.04                                | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 |
| 27   | 1.01                                | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 |
| 28   | 0.99                                | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 |
| 29   | 0.97                                | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 |
| 30   | 0.95                                | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 |
| 35   | 0.85                                | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 |
| 40   | 0.77                                | 0.87 | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 |
| 45   | 0.73                                | 0.83 | 0.93 | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 |
| 50   | 0.70                                | 0.80 | 0.90 | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 |

(Continued)

(8 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion   | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0  | 2.00                                | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 | 2.90 | 3.00 | 3.10 | 3.20 |
| 6- to 12-in. Layer, Transition (Spring and Autumn) (Continued) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| Clay Soils   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1  | 1.92                                | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 | 2.82 | 2.92 | 3.02 | 3.12 |
| 2  | 1.85                                | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 | 2.95 | 3.05 |
| 3  | 1.81                                | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 | 2.91 | 3.01 |
| 4  | 1.77                                | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 | 2.87 | 2.97 |
| 5  | 1.73                                | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 | 2.83 | 2.93 |
| 6  | 1.69                                | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 | 2.79 | 2.89 |
| 7  | 1.65                                | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 |
| 8  | 1.61                                | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 |
| 9  | 1.57                                | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 |
| 10   | 1.53                                | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 |
| 11   | 1.50                                | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 |
| 12   | 1.47                                | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 |
| 13   | 1.44                                | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 |
| 14   | 1.41                                | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 |
| 15   | 1.38                                | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 |
| 16   | 1.36                                | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 |
| 17   | 1.34                                | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 |
| 18   | 1.32                                | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 |
| 19   | 1.30                                | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 |
| 20   | 1.28                                | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 |
| 21   | 1.26                                | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 |
| 22   | 1.25                                | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 |
| 23   | 1.24                                | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 |
| 24   | 1.23                                | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 |
| 25   | 1.22                                | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 |
| 26   | 1.21                                | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 |
| 27   | 1.20                                | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 |
| 28   | 1.19                                | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 |
| 29   | 1.18                                | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 |
| 30   | 1.17                                | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 |
| 35   | 1.14                                | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 |
| 40   | 1.11                                | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 |
| 45   | 1.09                                | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 |
| 50   | 1.07                                | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 |

(Continued)

(9 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion     | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
|                            | 1.20                                | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 |
| 6- to 12-in. Layer, Winter |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| Sand Soils                 |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1                          | 1.14                                | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 |
| 2                          | 1.09                                | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 |
| 3                          | 1.06                                | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 |
| 4                          | 1.03                                | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 |
| 5                          | 1.00                                | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 |
| 6                          | 0.98                                | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 |
| 7                          | 0.96                                | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 |
| 8                          | 0.95                                | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 |
| 9                          | 0.94                                | 1.04 | 1.14 | 1.24 | 1.34 | 1.44 | 1.54 | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 |
| 10                         | 0.93                                | 1.03 | 1.13 | 1.23 | 1.33 | 1.43 | 1.53 | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 |
| 11                         | 0.92                                | 1.02 | 1.12 | 1.22 | 1.32 | 1.42 | 1.52 | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 |
| 12                         | 0.91                                | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 |
| 13                         | 0.91                                | 1.01 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 |
| 14                         | 0.90                                | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 |
| 15                         | 0.90                                | 1.00 | 1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 |
| 16                         | 0.89                                | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 |
| 17                         | 0.89                                | 0.99 | 1.09 | 1.19 | 1.29 | 1.39 | 1.49 | 1.59 | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 |
| 18                         | 0.88                                | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 |
| 19                         | 0.88                                | 0.98 | 1.08 | 1.18 | 1.28 | 1.38 | 1.48 | 1.58 | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 |
| 20                         | 0.87                                | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 |
| 21                         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 22                         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 23                         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 24                         | 0.87                                | 0.97 | 1.07 | 1.17 | 1.27 | 1.37 | 1.47 | 1.57 | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 |
| 25                         | 0.86                                | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 |
| 26                         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 27                         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 28                         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 29                         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 30                         | 0.86                                | 0.96 | 1.06 | 1.16 | 1.26 | 1.36 | 1.46 | 1.56 | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 |
| 35                         | 0.85                                | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 |
| 40                         | 0.85                                | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 |

(Continued)

(10 of 12 sheets)



Table A7 (Continued)

| Days<br>Deple-<br>tion                 | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
|  | 1.80                                | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 | 2.90 | 3.00 |
| 6- to 12-in. Layer, Winter (Continued) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| Silt Soils                             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1                                      | 1.77                                | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 | 2.87 | 2.97 |
| 2                                      | 1.75                                | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 | 2.95 |
| 3                                      | 1.73                                | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 | 2.83 | 2.93 |
| 4                                      | 1.71                                | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 | 2.91 |
| 5                                      | 1.69                                | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 | 2.79 | 2.89 |
| 6                                      | 1.67                                | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 | 2.87 |
| 7                                      | 1.66                                | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 | 2.66 | 2.76 | 2.86 |
| 8                                      | 1.65                                | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 |
| 9                                      | 1.64                                | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 | 2.84 |
| 10                                     | 1.63                                | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 | 2.83 |
| 11                                     | 1.62                                | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 | 2.82 |
| 12                                     | 1.61                                | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 |
| 13                                     | 1.60                                | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 |
| 14                                     | 1.59                                | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 | 2.79 |
| 15                                     | 1.58                                | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 | 2.68 | 2.78 |
| 16                                     | 1.57                                | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 |
| 17                                     | 1.56                                | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 | 2.66 | 2.76 |
| 18                                     | 1.56                                | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 | 2.66 | 2.76 |
| 19                                     | 1.55                                | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 |
| 20                                     | 1.55                                | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 |
| 21                                     | 1.54                                | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 |
| 22                                     | 1.54                                | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 |
| 23                                     | 1.53                                | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 |
| 24                                     | 1.53                                | 1.63 | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 |
| 25                                     | 1.52                                | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 |
| 26                                     | 1.52                                | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 |
| 27                                     | 1.52                                | 1.62 | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 |
| 28                                     | 1.51                                | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 |
| 29                                     |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 30                                     | 1.51                                | 1.61 | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 |
| 35                                     | 1.50                                | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 |
| 40                                     | 1.50                                | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 |

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(11 of 12 sheets)



Table A7 (Concluded)

| Days<br>Deple-<br>tion                        | Field Maximum Moisture Content, in. |      |      |      |      |      |      |      |      |      |      |      |      |
|---|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0   | 2.00                                | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 | 2.90 | 3.00 | 3.10 | 3.20 |
| <u>6- to 12-in. Layer, Winter (Continued)</u> |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| <u>Clay Soils</u>                             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |
| 1   | 1.95                                | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 | 2.95 | 3.05 | 3.15 |
| 2   | 1.90                                | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 | 2.90 | 3.00 | 3.10 |
| 3   | 1.87                                | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 | 2.87 | 2.97 | 3.07 |
| 4   | 1.84                                | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 | 2.84 | 2.94 | 3.04 |
| 5   | 1.81                                | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 | 2.91 | 3.01 |
| 6   | 1.79                                | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 | 2.79 | 2.89 | 2.99 |
| 7   | 1.77                                | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 | 2.87 | 2.97 |
| 8   | 1.75                                | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 | 2.95 |
| 9   | 1.73                                | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 | 2.83 | 2.93 |
| 10  | 1.71                                | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 | 2.91 |
| 11  | 1.69                                | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 | 2.79 | 2.89 |
| 12  | 1.67                                | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 | 2.87 |
| 13  | 1.66                                | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 | 2.66 | 2.76 | 2.86 |
| 14  | 1.65                                | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 | 2.85 |
| 15  | 1.64                                | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 | 2.84 |
| 16  | 1.63                                | 1.73 | 1.83 | 1.93 | 2.03 | 2.13 | 2.23 | 2.33 | 2.43 | 2.53 | 2.63 | 2.73 | 2.83 |
| 17  | 1.62                                | 1.72 | 1.82 | 1.92 | 2.02 | 2.12 | 2.22 | 2.32 | 2.42 | 2.52 | 2.62 | 2.72 | 2.82 |
| 18  | 1.61                                | 1.71 | 1.81 | 1.91 | 2.01 | 2.11 | 2.21 | 2.31 | 2.41 | 2.51 | 2.61 | 2.71 | 2.81 |
| 19  | 1.60                                | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 |
| 20  | 1.60                                | 1.70 | 1.80 | 1.90 | 2.00 | 2.10 | 2.20 | 2.30 | 2.40 | 2.50 | 2.60 | 2.70 | 2.80 |
| 21  | 1.59                                | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 | 2.79 |
| 22  | 1.59                                | 1.69 | 1.79 | 1.89 | 1.99 | 2.09 | 2.19 | 2.29 | 2.39 | 2.49 | 2.59 | 2.69 | 2.79 |
| 23  | 1.58                                | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 | 2.68 | 2.78 |
| 24  | 1.58                                | 1.68 | 1.78 | 1.88 | 1.98 | 2.08 | 2.18 | 2.28 | 2.38 | 2.48 | 2.58 | 2.68 | 2.78 |
| 25  | 1.57                                | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 |
| 26  | 1.57                                | 1.67 | 1.77 | 1.87 | 1.97 | 2.07 | 2.17 | 2.27 | 2.37 | 2.47 | 2.57 | 2.67 | 2.77 |
| 27  | 1.56                                | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 | 2.66 | 2.76 |
| 28  | 1.56                                | 1.66 | 1.76 | 1.86 | 1.96 | 2.06 | 2.16 | 2.26 | 2.36 | 2.46 | 2.56 | 2.66 | 2.76 |
| 29  | 1.55                                | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 |
| 30  | 1.55                                | 1.65 | 1.75 | 1.85 | 1.95 | 2.05 | 2.15 | 2.25 | 2.35 | 2.45 | 2.55 | 2.65 | 2.75 |
| 35  | 1.54                                | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 |
| 40  | 1.54                                | 1.64 | 1.74 | 1.84 | 1.94 | 2.04 | 2.14 | 2.24 | 2.34 | 2.44 | 2.54 | 2.64 | 2.74 |



## APPENDIX B: DESCRIPTIONS AND SOIL PROPERTIES OF STRENGTH-MOISTURE SURVEY SITES

### Objectives of Survey and Scope of Appendix B

1. From June 1954 to July 1955 a soil-strength and soil-moisture prediction survey was conducted in four regions designated by the U. S. Forest Service as the southern, northeastern, lake states, and intermountain regions. The objectives of this survey were to check the accuracy of the soil-moisture prediction method using the tentative average relations on the principal soils of these regions, to determine cone index and remolding index values of these soils, and to test means of predicting soil strength. The check on the accuracy of the soil-moisture prediction method is discussed in the main report. The cone and remolding index (strength) values are listed in this appendix. The test of soil-strength prediction awaits the completion of a workable strength-prediction system. This appendix also describes the survey regions, the procedures used on the surveys, and lists site characteristics and physical properties of the soils.

### Survey Regions

#### Southern

2. The southern region includes the Mississippi Alluvial Plain, and the eastern section of the Gulf Coastal Plain in the states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, and Tennessee.\* Here the summers are hot and humid and the winters cool with considerable frost, but the ground seldom freezes.

3. The soils fall into four broad groups: Mississippi River alluvium, loess, Coastal Plain sands and clays, and Rendzina clays.

#### Northeastern

4. The northeastern region embraces the Allegheny and Catskill sections of the Appalachian Plateau province in Pennsylvania and New York, and

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\* Basil D. Doss and W. M. Broadfoot, Properties of 91 Southern Soil Series, Occasional Paper 147 (New Orleans, La., Southern Forest Experiment Station, 1956).



the southern portion of New England. Parts of six states are included: Connecticut, Massachusetts, New Hampshire, New York, Pennsylvania, and Vermont.\* Average January and July temperatures are very much cooler than those in the southern region. Frost periods are lengthy and frost sometimes penetrates deep into the ground. The region receives considerable precipitation, but less than the southern.

5. Soils are derived largely from glacial till and outwash of sandstone and shale. They are podzolic in nature and quite variable in drainage and texture. Noncultivated areas tend to be stony.

#### Lake states

6. The lake states region includes the Superior-Upland section of the Laurentian Upland province in Minnesota and northern Wisconsin, the Driftless and Eastern Lake section of the Central Lowland province in southern Wisconsin, and the Till Plains of Iowa and northern Illinois. Portions of Illinois, Iowa, Minnesota, and Wisconsin\*\* are included. This is the coldest of the four regions, and has the greatest snowfall and deepest frost penetration. The annual precipitation of 20 to 30 in. is somewhat less than that received in the northeastern and southern regions.

7. Soils in the southern part of the region average from medium to fine in texture, tend to have high organic content, and are variable in drainage characteristics. In the northern portion, the glacial drift soils are coarser textured and frequently have high water tables.

#### Intermountain

8. The intermountain region includes a large portion of the Great Basin between the Sierra Nevadas and the high plateaus traversing north-south through Utah. It also extends south as far as the southern border of Utah and north to include the Snake River drainage basin in southern Idaho. This region includes parts of three states, Idaho, Nevada, and Utah.† The

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\* A. R. Eschner, B. O. Jones, and R. C. Moyle, Physical Properties of 134 Soils in Six Northeastern States, Paper No. 89 (Upper Darby, Pa., Northeastern Forest Experiment Station, 1957).

\*\* John L. Thames and Edmond I. Swensen, Properties of 160 Soils of Four North Central States, Paper No. 38 (St. Paul, Minn., Lake States Forest Experiment Station, 1956).

† Robert E. Taylor, Some Properties of 144 Soils from Three Intermountain States, Miscellaneous Publication No. 7 (Ogden, Utah, Intermountain Forest and Range Experiment Station, 1956).



climate is variable, reflecting the influence of differences in elevation on precipitation and air temperature. Annual precipitation varies from 5 in. in the hot desert areas to over 30 in. in the high mountains.

9. Soils are likewise variable, ranging from Gray Desert soils to Podzols. Valley soils are largely derived from alluvium. Soils on the higher slopes and plateaus are residual in nature, while some of the Snake River Plain soils are of loessial origin. The residual and loessial soils are largely unclassified and are usually described only in terms of parent material.

#### Selection of Sites, and Survey Procedures

10. A total of 618 sites were used in the survey, located approximately as shown in fig. B1. Of these, 178 were in the southern, 135 in the northeastern, 161 in the lake states, and 144 in the intermountain region. Sites were established on major soils but were restricted to locations within five miles of a regular weather station, on accessible roads. Not more than five sites were located near each of the selected weather sub-stations. Sites were tentatively selected on the basis of state soil-association maps or county soil-survey maps and detailed highway maps. No site was located more than 100 yd from the road. Each was about one-tenth acre in size, soil and cover conditions were uniform, and the sites were not currently in cultivation.

11. A standard procedure was followed for describing each site and for sampling the soil. Upon establishment, the location, soil, vegetation, and topography were described in detail. In the southern and northeastern regions, all soils were identified by regional soil correlators or surveyors of the Soil Conservation Service (SCS). In the lake states region, county soil maps and farm plan maps supplied by the SCS were used to identify the soils. Twenty-one soils were not classified. In the intermountain region, SCS personnel visited sites or supplied maps to aid in identification; however, 45 soils could not be typed.

12. The soil properties were determined from bulk samples and 2-in.-diameter and 1-3/8-in.-high cores. For sampling purposes, each site was divided into three plots as shown in fig. B2. The bulk samples, composited



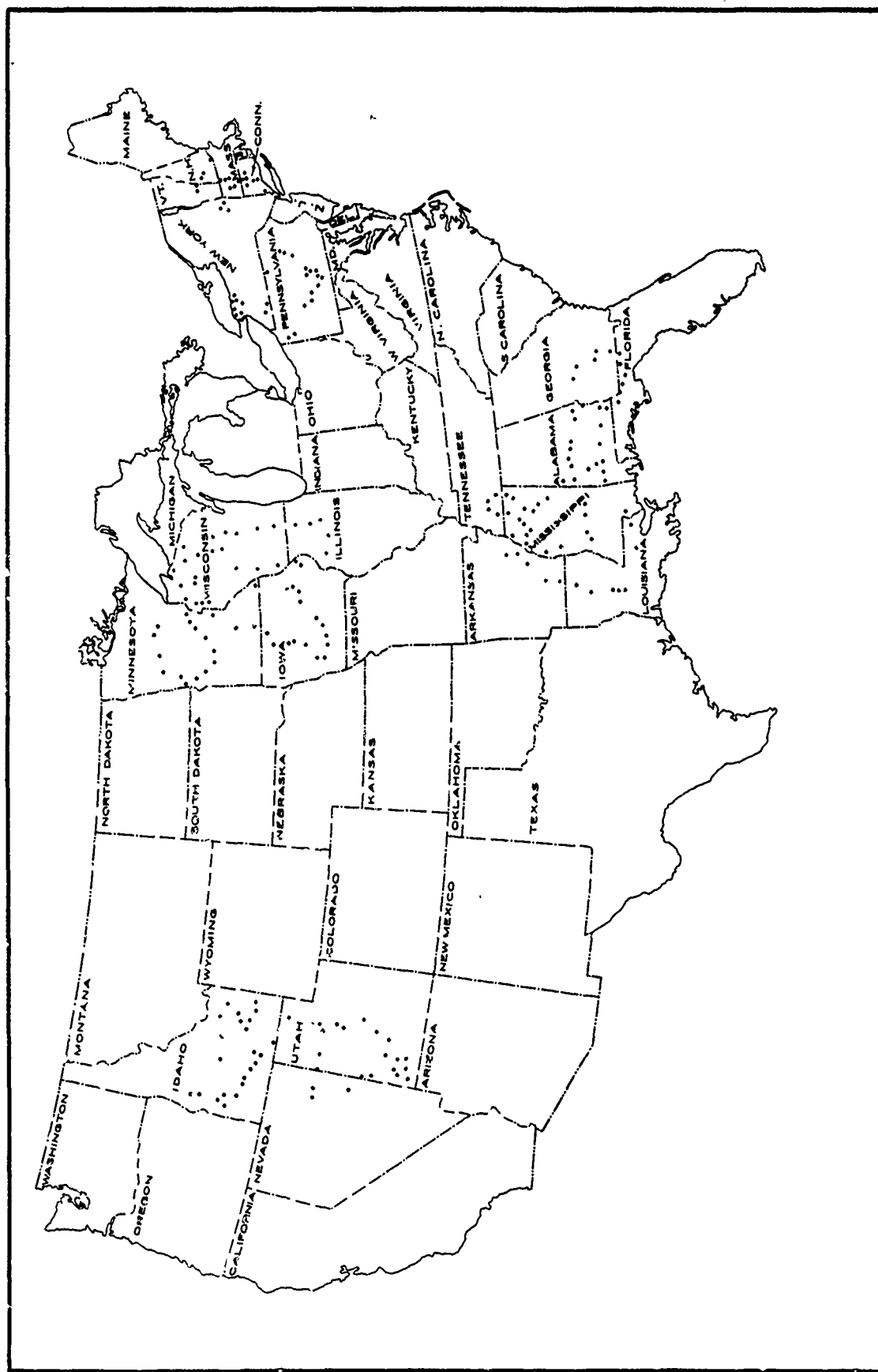


Fig. B1. Location of soil strength-moisture survey sites



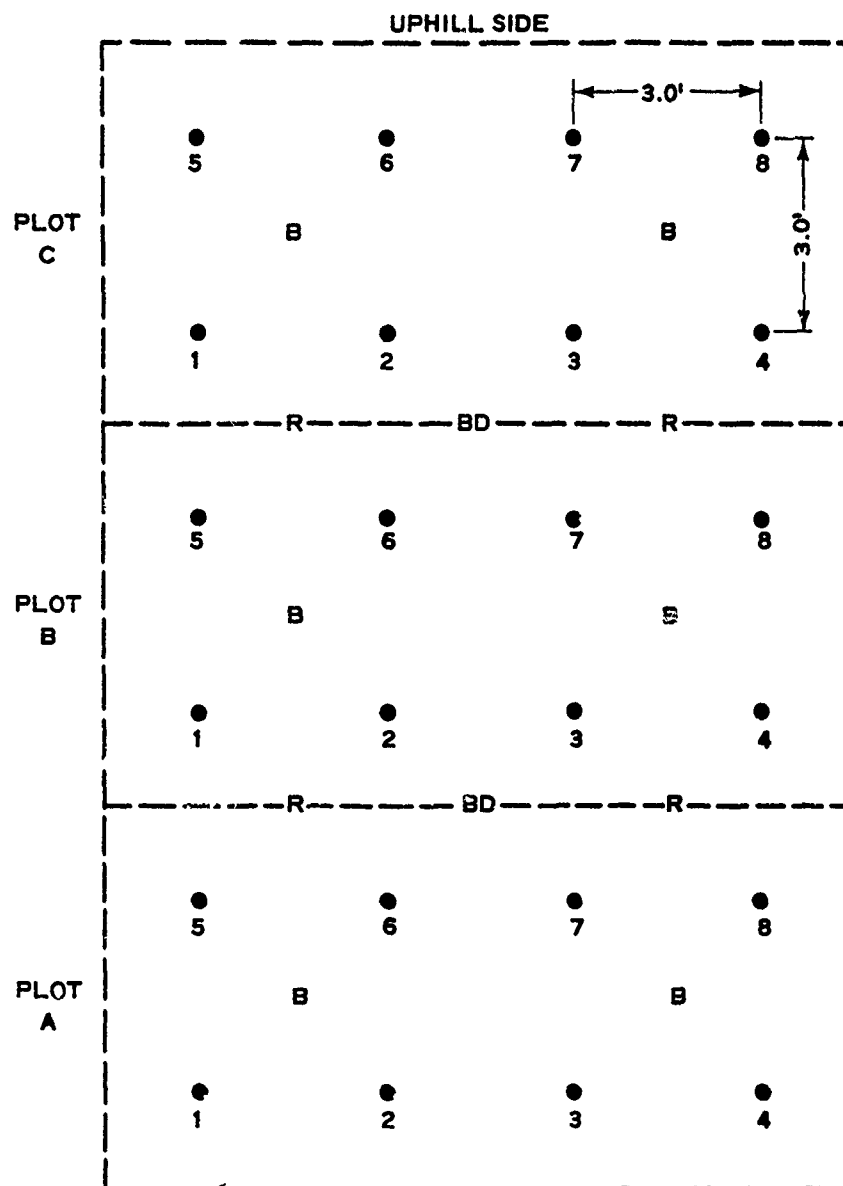


Fig. B2. Sampling system for survey sites



from six locations (two in each plot), were taken from the surface to 6-in., 6- to 12-in., and the 12- to 18-in. layers and used for mechanical analysis and determinations of plasticity constants and organic matter content. Bulk density and tension values were determined from the 2-in.-diameter and 1-3/8-in.-high cores obtained with the modified San Dimas or drive-type sampler\* when the soil was moist. Where present, unincorporated organic matter was scraped aside prior to sampling. Cores were taken in duplicate at the surface to 3-in., 3- to 6-in., 6- to 9-in., and 9- to 12-in. layers.

13. At least eight visits at about monthly intervals were made to each site to obtain gravimetric soil-moisture samples at three randomly selected points (one within each plot), and cone index readings at two points one foot apart at each moisture point, making a total of six cone measurements. Samples for moisture determinations were taken at the surface to 6-in., 6- to 12-in., and 12- to 18-in. layers at each sampling point, and the three random samples of each depth were composited in a single container. Cone measurements were taken at the surface, 3-, 6-, 9-, 12-, and 18-in. depths at each spot.

14. On at least two visits, when the soil was wet, remolding values were determined in duplicate for the 6- to 12-in. layer at points shown in fig. B2. In some cases, remolding was done on the surface to 6-in. layer when the 6- to 12-in. sample could not be obtained. In coarse textured and stony soils, the penetrometer with a 0.20-sq-in. cone base was used with the vibrated remolding test when the regular instrument with a 0.5-sq-in. base could not penetrate the soil in the cylinder. Notes of vegetation development, occurrence of free water, site disturbance, etc., were also made at each visit. At very wet sites, auger holes were dug and measurements made of water-table elevation.

#### Site Locations and Descriptions

15. Table B1 gives the location, land form, topography, wetness index, vegetation, and land use of each survey site. The location is shown

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\* L. A. Andrews and W. M. Broadfoot, "The San Dimas soil-core sampler." Soil Science, 85:297-301 (1958).



by the place of the nearest weather station, the county and state, and by the longitude, latitude, and elevation of the site as determined from maps.

16. The land form classification system used in table B1, column 8, was based on decisions reached at a conference held by the Corps of Engineers in January 1953 at the Waterways Experiment Station, and revised in February 1957. The symbols are explained in the following key.

Key to Land Form Symbols

I. Glacial

- A. Nonsoil
- B. Ice
- C. Lacustrine
- D. Drift
  - 1. Outwash
  - 2. Till plain
    - a. Old-layered
    - b. Young-plastic
    - c. Young-granular
  - 3. Moraine
  - 4. Esker
  - 5. Kame terrace

II. Water Deposited

- A. Delta
  - 1. Natural levee
  - 2. Swamp
- B. Flood Plain - Active
  - 1. Undifferentiated alluvium
  - 2. Natural levee
    - a. Crevasse
  - 3. Swamp
  - 4. Point bar
    - a. Ridge
    - b. Swale
- C. Terrace
  - 1. Alluvial
  - 2. Lacustrine
  - 3. Marine
- D. Alluvial Fan
- E. Coastal Plain
  - 1. Beach
  - 2. Marsh
  - 3. Dune
  - 4. Undifferentiated
- F. Desert Plain
- G. Lacustrine
- H. Bajada
- I. Playa

III. Aeolian

- A. Loess
  - 1. Hill
  - 2. Flat
- B. Sand

IV. Residual

- A. Sedimentary Rock
  - 1. Limestone
  - 2. Shale
  - 3. Sandstone
  - 4. Limestone and shale
  - 5. Sandstone and shale
  - 6. Chalk
- B. Igneous and Metamorphic Rock
  - 1. Basalt
  - 2. Metamorphic
  - 3. Intrusive
- C. Unconsolidated Sediment
  - 1. Clay
  - 2. Sand
  - 3. Undifferentiated

V. Miscellaneous

- A. Evaporite
- B. Pyroclastic
- C. Organic
  - 1. Muskeg
  - 2. Peat
  - 3. Swamp
- D. Laterite
- E. Varved clay
- F. Colluvial



17. Under topography, the direction of slope or aspect and the percentage of slope are given. The position of the site is indicated as upland, terrace, or bottomland, with additional information such as ridge, upper slope, etc., included. Surface and internal drainage are shown as good, medium, or poor.

18. The wetness index, described in paragraph 21 of the main report, is an arbitrary classification of site conditions into five groups, considering both depth to water table and depth of moisture penetration, to indicate the maximum moisture content that can be attained in the surface to 12-in. layer. The classification ranges from zero for arid conditions to four when the soil is practically saturated.

19. The predominant vegetation type on the site is listed. Under land use, disturbance such as cultivation or grazing is given. If no evidence of use for about the preceding five years was apparent, the site was considered undisturbed.

#### Soil Properties

20. The soil properties of each survey site for the surface to 6-in. and 6- to 12-in. layers are listed in table B2; the table is subdivided by the four regions.

21. Texture class follows the terminology given in the U. S. Department of Agriculture Soil Survey Manual, p 210.\* The following symbols are used, alone or in combination:

|           |          |
|-----------|----------|
| S = sand  | C = clay |
| Si = silt | L = loam |

22. The mechanical composition was determined at the Waterways Experiment Station by a combination sieve and hydrometer method,\*\* and is expressed in the table as per cent of dry weight. A previous analysis had an error in technique. Some of the samples were exhausted before the final analysis. Instead of recording blanks, earlier analyses for the exhausted

\* U. S. Department of Agriculture, Soil Survey Manual, Handbook 18, (Government Printing Office, 1951), 503 pp, illus.

\*\* U. S. Army Engineer Division, Lower Mississippi Valley, and U. S. Army Engineer Waterways Experiment Station, Soils Laboratory Manual, (Vicksburg, Miss., 1951).



samples were adjusted considering differences between analyses of the other samples, and the adjusted values recorded and indicated by an asterisk (\*).

23. Stone content was estimated visually in the field for soils having significant proportions of fragments coarser than 2 mm. In some cases, stones of boulder size occurred on the sites. Stone content is expressed as percentage of the total volume of soil in the surface to 18-in. layer.

24. Organic-matter determinations were made by a modified Walkley rapid-dichromate oxidation method\* at the Mississippi Agriculture Experiment Station and are expressed as percentage by weight. When the organic matter content was determined to be more than 5% by the Walkley method, the loss-on-ignition method, following modified procedures of the Association of Official Agricultural Chemists,\*\* was used.

25. The plasticity constants of the 6- to 12-in. layer were determined by the Waterways Experiment Station.† The figures are expressed as moisture content in per cent of dry weight. The liquid limit of some soils of low plasticity, such as sands and sandy loams, cannot be determined with the standard procedure and a modified procedure was used to make tests on these coarse materials as indicated in the table†† by a double asterisk (\*\*). If the sample was exhausted before the modified procedure was used, no value (NV), is indicated.

26. The classification symbols are those of the Unified Soil Classification System (USCS), which has been adopted by the Corps of Engineers to describe soils from an engineering construction standpoint, and

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\* Michael Peech, L. T. Alexander, L. A. Dean, and J. F. Reed, Methods of Soil Analysis for Soil-fertility Investigations, Circular 757 (U. S. Department of Agriculture, 1947), 25 pp.

\*\* Association of Official Agricultural Chemists, Official and Tentative Methods of Analysis of the Association, 6th ed (Washington, D. C., 1945), 932 pp, illus.

† Loc. cit., p B8.

†† U. S. Army Engineer Waterways Experiment Station, Modified Method for Determining Liquid Limit of Soils (not yet published). The modified procedure is presently under study in the Soils Division as to its possible utility. The inclusion of data in this report using the modified method in no way indicates that it is approved for official use.



identifies soils according to their textural and plastic qualities.\* The amount of fine-grained material is that passing a 200-mesh sieve ( $<0.074$  mm).

27. Bulk density and tension data were obtained from the 2-in. cores described earlier in paragraph 12. The moisture held by the soil at zero tension (saturation) was determined by weighing the 2-in. cores after they had been soaked in a pan of water. As some water was lost during transfer, and as all pores are usually not filled by this method, these values are frequently less than the theoretical maximum. The 0.06-atm tension values were determined by use of a tension table.\*\* The tension values are expressed in percentage of dry weight.

#### Soil-moisture Content and Strength Data

28. Soil-moisture content and strength (cone and remolding index) data obtained at each visit to the survey sites are presented in table B3, which is subdivided by the four regions. The heading for each site includes the site number, location by county and state, soil series name, the USDA textural class of the surface to 6-in. and 6- to 12-in. layers, and last, in parentheses, the USCS soil symbol for the 6- to 12-in. layer. The column at the left gives the date of the visit. The next three columns list the moisture content on the percentage of dry weight basis of the three 6-in. layers. Each value represents the composite of three random samples. The next two columns give the moisture content by inches of water per 6 in. of soil depth. The next columns give the average cone index (an average of the 6-, 9-, and 12-in. measurements for six penetrations), the average remolding index, and the water-table depth measurements. In the remolding test, if the sample in the cylinder could not be penetrated below the surface, no test (NT) is indicated.

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\* U. S. Army Engineer Waterways Experiment Station, The Unified Soil Classification System, Technical Memorandum No. 3-357, vol 1 (Vicksburg, Miss., 1953), 30 pp, illus.

\*\* R. W. Leamer and B. Shaw, "A simple apparatus for measuring non-capillary porosity on an extensive scale," Jour. Amer. Soc. Agron., 33:1003 (1941).



Table B1  
Location and Description of Strength-moisture Survey Sites

| Site No.        | Weather Station | County or Parish | State | Lat.   | Long.  | Elev. ft. | Soil Form      | Topography |                    |         | Drainage |                | Wetness Index | Vegetation | Land Use          |
|-----------------|-----------------|------------------|-------|--------|--------|-----------|----------------|------------|--------------------|---------|----------|----------------|---------------|------------|-------------------|
|                 |                 |                  |       |        |        |           |                | Aspect     | Position           | Slope % | Surface  | Internal       |               |            |                   |
| Southern Region |                 |                  |       |        |        |           |                |            |                    |         |          |                |               |            |                   |
| 101             | Rolling Fork    | Shartley         | Miss. | 32°52' | 90°52' | 105       | 11B2 Level     |            | Terrace flat       | 0       | Poor     | Medium         | 2             | Herbaceous | Cultivated hay    |
| 102             | Rolling Fork    | Shartley         | Miss. | 32°53' | 90°52' | 105       | 11B2 Level     |            | Terrace flat       | 0       | Poor     | Medium         | 2             | Herbaceous | Lawn              |
| 103             | Rolling Fork    | Shartley         | Miss. | 32°53' | 90°52' | 105       | 11B2 Level     |            | Terrace flat       | 0       | Poor     | Medium         | 2             | Herbaceous | Cultivated (idle) |
| 104             | Rolling Fork    | Shartley         | Miss. | 32°53' | 90°52' | 105       | 11B2 Level     |            | Terrace flat       | 0       | Poor     | Medium         | 2             | Herbaceous | Hay (airport)     |
| 105             | Stonerville     | Washington       | Miss. | 32°53' | 90°55' | 127       | 11B2 Level     |            | Terrace flat       | 0       | Good     | Good           | 4             | Herbaceous | Lawn              |
| 106             | Stonerville     | Washington       | Miss. | 32°53' | 90°55' | 127       | 11B3/1 Level   |            | Bottom flat        | 0       | Poor     | Poor           | 4             | Herbaceous | Undisturbed       |
| 107             | Stonerville     | Washington       | Miss. | 32°53' | 90°55' | 127       | 11B3/1 Level   |            | Bottom flat        | 0       | Poor     | Poor           | 4             | Herbaceous | Undisturbed       |
| 108             | Stonerville     | Washington       | Miss. | 32°53' | 90°55' | 127       | 11B3/1 Level   |            | Bottom flat        | 0       | Poor     | Poor           | 4             | Herbaceous | Partly logged     |
| 109             | Stonerville     | Washington       | Miss. | 32°53' | 90°56' | 127       | 11B3/1 Level   |            | Bottom flat        | 0       | Poor     | Poor           | 4             | Herbaceous | Undisturbed       |
| 110             | Clarksdale      | Coahoma          | Miss. | 34°10' | 90°36' | 177       | 11B3/1 Level   |            | Bottom flat        | 0       | Poor     | Poor           | 4             | Herbaceous | Lawn              |
| 111             | Clarksdale      | Coahoma          | Miss. | 34°10' | 90°36' | 177       | 11B3/1 Level   |            | Bottom flat        | 0       | Poor     | Poor           | 4             | Herbaceous | Grazed            |
| 112             | Clarksdale      | Coahoma          | Miss. | 34°13' | 90°32' | 177       | 11B2 Level     |            | Terrace            | 0       | Poor     | Good           | 3             | Herbaceous | Undisturbed       |
| 113             | Tunica          | Tunica           | Miss. | 34°40' | 90°23' | 190       | 11B2/3 Level   |            | Bottom flat        | 0       | Poor     | Good           | 4             | Herbaceous | Grazed            |
| 114             | Tunica          | Tunica           | Miss. | 34°41' | 90°23' | 190       | 11B2/3 Level   |            | Bottom flat        | 0       | Poor     | Good           | 4             | Herbaceous | Undisturbed       |
| 115             | Tunica          | Tunica           | Miss. | 34°43' | 90°23' | 190       | 11B3/1 Level   |            | Bottom flat        | 4       | Poor     | Medium         | 4             | Herbaceous | Undisturbed       |
| 116             | Forest City     | St. Francis      | Ark.  | 35°01' | 90°46' | 261       | 11A1 Level     |            | Upland ridge       | 0       | Good     | Good           | 2             | Herbaceous | Undisturbed       |
| 117             | Forest City     | St. Francis      | Ark.  | 35°01' | 90°47' | 261       | 11A1 Level     |            | Upland ridge       | 3       | Good     | Good           | 2             | Herbaceous | Undisturbed       |
| 118             | Forest City     | St. Francis      | Ark.  | 35°01' | 90°47' | 261       | 11A1 Level     |            | Upland ridge       | 35      | Good     | Medium         | 2             | Herbaceous | Undisturbed       |
| 119             | Forest City     | St. Francis      | Ark.  | 35°01' | 90°47' | 261       | 11A1 Level     |            | Upland ridge       | 35      | Good     | Medium         | 2             | Herbaceous | Grazed            |
| 120             | Forest City     | St. Francis      | Ark.  | 34°42' | 90°52' | 234       | 11C1 Northeast |            | Terrace slope      | 8       | Good     | Medium         | 2             | Herbaceous | Undisturbed       |
| 121             | Forest City     | St. Francis      | Ark.  | 34°40' | 90°49' | 234       | 11C1 Level     |            | Terrace flat       | 0       | Medium   | Medium         | 2             | Herbaceous | Undisturbed       |
| 122             | Forest City     | St. Francis      | Ark.  | 34°40' | 90°46' | 234       | 11C1 Level     |            | Terrace flat       | 0       | Poor     | Poor           | 3             | Herbaceous | Grazed            |
| 123             | Forest City     | St. Francis      | Ark.  | 34°33' | 90°51' | 195       | 11C1 Level     |            | Terrace flat       | 0       | Poor     | Poor           | 4             | Herbaceous | Undisturbed       |
| 124             | Forest City     | St. Francis      | Ark.  | 34°33' | 90°51' | 195       | 11C1 Level     |            | Terrace flat       | 0       | Poor     | Poor           | 4             | Herbaceous | Undisturbed       |
| 125             | Forest City     | St. Francis      | Ark.  | 34°35' | 90°59' | 195       | 11C1 Level     |            | Bottom flat        | 0       | Poor     | Poor           | 4             | Herbaceous | Undisturbed       |
| 126             | Forest City     | St. Francis      | Ark.  | 34°35' | 90°59' | 195       | 11C1 Level     |            | Bottom flat        | 0       | Poor     | Poor           | 4             | Herbaceous | Undisturbed       |
| 127             | Forest City     | St. Francis      | Ark.  | 34°39' | 91°48' | 285       | 11C1 Northeast |            | Upland upper slope | 4       | Good     | Good           | 2             | Herbaceous | Logged            |
| 128             | Forest City     | St. Francis      | Ark.  | 34°36' | 91°48' | 285       | 11C1 West      |            | Upland upper slope | 8       | Good     | Good           | 2             | Herbaceous | Undisturbed       |
| 129             | Forest City     | St. Francis      | Ark.  | 33°00' | 91°58' | 175       | 11C1 Level     |            | Upland flat        | 0       | Good     | Good           | 2             | Herbaceous | Undisturbed       |
| 130             | Forest City     | St. Francis      | Ark.  | 33°00' | 91°59' | 175       | 11C1 Level     |            | Terrace flat       | 0       | Poor     | Poor           | 2             | Herbaceous | Grazed            |
| 131             | Forest City     | St. Francis      | Ark.  | 33°00' | 92°00' | 175       | 11C1 Level     |            | Bottom flat        | 0       | Poor     | Good           | 4             | Herbaceous | Undisturbed       |
| 132             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 3       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 133             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 3       | Good     | Good to medium | 2             | Herbaceous | Grazed            |
| 134             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 135             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 136             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 137             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 138             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 139             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 140             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 141             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 142             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 143             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 144             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 145             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 146             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 147             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 148             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 149             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 150             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 151             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 152             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 153             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 154             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 155             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 156             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 157             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 158             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 159             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 160             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 161             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 162             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 163             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 164             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 165             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 166             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 167             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 168             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 169             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 170             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 171             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 172             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 173             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 174             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 175             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 176             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 177             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 178             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 179             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 180             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 181             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 182             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 183             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 184             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 185             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 186             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 187             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 188             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 189             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 190             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 191             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 192             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 193             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 194             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 195             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 196             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 197             | Forest City     | St. Francis      | Ark.  | 33°01' | 91°57' | 175       | 11C1 North     |            | Upland upper flat  | 4       | Good     | Good to medium | 2             | Herbaceous | Undisturbed       |
| 1               |                 |                  |       |        |        |           |                |            |                    |         |          |                |               |            |                   |

\* Diagonal (/) represents "or."



Table B1. (Continued)

| Site No.                    | Weather Station | County or Parish | State | Lat    | Long.  | Elev. Ft. | Eng. Cont. Land Form | Topography |                    |         | Wetness Index  | Vegetation                        | Land Use                   |
|-----------------------------|-----------------|------------------|-------|--------|--------|-----------|----------------------|------------|--------------------|---------|----------------|-----------------------------------|----------------------------|
|                             |                 |                  |       |        |        |           |                      | Aspect     | Position           | Slope % |                |                                   |                            |
|                             |                 |                  |       |        |        |           |                      |            |                    |         |                |                                   |                            |
| Southern Region (Continued) |                 |                  |       |        |        |           |                      |            |                    |         |                |                                   |                            |
| 147                         | Poplarville     | Pearl River      | Miss. | 30°48' | 89°41' | 313       | IVC3                 | Level      | Upland flat        | 0       | Good to medium | Herbaceous                        | Lawn                       |
| 148                         | Poplarville     | Pearl River      | Miss. | 30°48' | 89°41' | 313       | IVC3                 | Northwest  | Upland upper slope | 3       | Good           | Herbaceous                        | Hay                        |
| 149                         | Poplarville     | Pearl River      | Miss. | 30°48' | 89°41' | 313       | IVC3                 | East       | Upland upper slope | 6       | Good           | Herbaceous                        | Hay                        |
| 201                         | Utica           | Hinds            | Miss. | 32°13' | 90°41' | 287       | IIIB1                | Level      | Bottom flat        | 0       | Poor           | Herbaceous                        | Grazed                     |
| 202                         | Utica           | Hinds            | Miss. | 32°11' | 90°38' | 287       | IIIA1                | South      | Upland upper slope | 5       | Good           | Mixed pine - hardwood, herbaceous | Undisturbed                |
| 203                         | Utica           | Hinds            | Miss. | 32°07' | 90°36' | 287       | IVC3                 | West       | Upland upper slope | 5       | Good           | Herbaceous                        | Grazed                     |
| 204                         | Utica           | Hinds            | Miss. | 32°08' | 90°32' | 287       | IIIB1                | Level      | Bottom flat        | 0       | Poor           | Herbaceous                        | Followed                   |
| 205                         | Oakley          | Hinds            | Miss. | 32°12' | 90°30' | 287       | IVC3                 | Level      | Terrace flat       | 0       | Medium         | Hardwood forest                   | Grazed                     |
| 206                         | Oakley          | Hinds            | Miss. | 32°12' | 90°30' | 287       | IIIB1                | Level      | Terrace flat       | 0       | Good           | Herbaceous                        | Grazed                     |
| 207                         | Oakley          | Hinds            | Miss. | 32°11' | 90°31' | 287       | IVC3                 | North      | Upland upper slope | 5       | Good           | Herbaceous                        | Hay                        |
| 208                         | Oakley          | Hinds            | Miss. | 32°13' | 90°31' | 287       | IVC3                 | Level      | Upland flat        | 0       | Poor           | Herbaceous                        | Hay                        |
| 209                         | Oakley          | Hinds            | Miss. | 32°13' | 90°31' | 287       | IVC3                 | Level      | Upland flat        | 0       | Medium         | Hardwood forest                   | Undisturbed                |
| 210                         | Forest          | Scott            | Miss. | 32°21' | 89°32' | 485       | IVC1                 | East       | Upland upper slope | 5       | Good           | Loblolly - shortleaf pine, brush  | Undisturbed                |
| 211                         | Forest          | Scott            | Miss. | 32°20' | 89°28' | 485       | IVC1                 | Level      | Upland flat        | 0       | Poor           | Loblolly pine                     | Undisturbed                |
| 212                         | Forest          | Scott            | Miss. | 32°22' | 89°27' | 485       | IVC1                 | Level      | Upland flat        | 0       | Poor           | Mixed hardwood and pine, hardwood | Undisturbed                |
| 213                         | Forest          | Scott            | Miss. | 32°22' | 89°26' | 485       | IVC1                 | Level      | Upland flat        | 0       | Poor           | Herbaceous                        | Cultivated (idle)          |
| 214                         | Newton          | Newton           | Miss. | 32°20' | 89°04' | 346       | IIIC1                | South      | Terrace flat       | 2       | Good to medium | Herbaceous                        | Hay                        |
| 215                         | Newton          | Newton           | Miss. | 32°20' | 89°06' | 346       | IIIB1                | Level      | Bottom flat        | 0       | Poor           | Herbaceous                        | Cultivated (idle)          |
| 216                         | Newton          | Newton           | Miss. | 32°20' | 89°06' | 346       | IIIC1                | South      | Terrace slope      | 8       | Good           | Herbaceous                        | Hay                        |
| 217                         | Newton          | Newton           | Miss. | 32°20' | 89°05' | 346       | IVC3                 | Northwest  | Upland upper slope | 5       | Good           | Herbaceous                        | Grazed                     |
| 218                         | Newton          | Newton           | Miss. | 32°20' | 89°04' | 346       | IVC3                 | Southeast  | Upland upper slope | 10      | Good           | Mixed pine - hardwood, herbaceous | Undisturbed                |
| 219                         | Brooksville     | Noxubee          | Miss. | 33°16' | 88°33' | 292       | IVB0                 | Level      | Upland flat        | 0       | Poor           | Herbaceous                        | Grazed                     |
| 220                         | Brooksville     | Noxubee          | Miss. | 33°16' | 88°33' | 292       | IVB0                 | South      | Upland upper flat  | 6       | Good           | Herbaceous                        | Grazed                     |
| 221                         | Brooksville     | Noxubee          | Miss. | 33°16' | 88°33' | 292       | IVB0                 | South      | Upland upper flat  | 4       | Poor           | Herbaceous                        | Grazed - experimental plot |
| 222                         | Starkeville     | Oktibbeha        | Miss. | 33°26' | 88°47' | 280       | IIIB1*               | Northwest  | Bottom flat        | 3       | Poor           | Herbaceous                        | Cultivated (idle)          |
| 223                         | Starkeville     | Oktibbeha        | Miss. | 33°28' | 88°46' | 280       | IIIB1*               | Level      | Terrace flat       | 0       | Medium         | Herbaceous                        | Cultivated (idle)          |
| 224                         | Dancy           | Webster          | Miss. | 33°37' | 89°03' | 360       | IVC3                 | Level      | Upland flat        | 0       | Poor           | Herbaceous                        | Undisturbed                |
| 225                         | Dancy           | Webster          | Miss. | 33°38' | 89°03' | 360       | IVC3                 | South      | Upland upper slope | 3       | Medium         | Herbaceous - few pine seedlings   | Undisturbed                |
| 226                         | Dancy           | Webster          | Miss. | 33°38' | 89°04' | 360       | IIIB1*               | Level      | Terrace flat       | 0       | Poor           | Herbaceous                        | Cultivated (idle)          |
| 227                         | Pontotoc        | Pontotoc         | Miss. | 34°08' | 89°00' | 405       | IVC3                 | Level      | Upland flat        | 0       | Poor           | Herbaceous                        | Lawn                       |
| 228                         | Pontotoc        | Pontotoc         | Miss. | 34°08' | 89°01' | 405       | IIIB1*               | Level      | Bottom flat        | 0       | Poor           | Herbaceous                        | Undisturbed                |
| 229                         | Pontotoc        | Pontotoc         | Miss. | 34°09' | 89°00' | 405       | IVC3                 | South      | Upland ridge       | 3       | Good           | Loblolly pine, herbaceous         | Undisturbed                |
| 230                         | Booneville      | Prentiss         | Miss. | 34°36' | 88°37' | 504       | IVC3                 | Level      | Upland flat        | 0       | Medium         | Herbaceous                        | Cultivated (idle)          |
| 231                         | Booneville      | Prentiss         | Miss. | 34°37' | 88°35' | 504       | IVC3                 | Northwest  | Upland upper slope | 8       | Good           | Herbaceous forest                 | Undisturbed                |
| 232                         | Booneville      | Prentiss         | Miss. | 34°42' | 88°33' | 504       | IIIB1*               | Level      | Bottom flat        | 0       | Poor           | Herbaceous                        | Grazed                     |
| 233                         | Corinth         | Alcorn           | Miss. | 34°53' | 88°33' | 490       | IIIB1*               | Level      | Bottom flat        | 0       | Poor           | Mixed pine - hardwood             | Cultivated (idle)          |
| 234                         | Corinth         | Alcorn           | Miss. | 34°53' | 88°27' | 490       | IVC3                 | Southeast  | Upland upper slope | 4       | Good           | Herbaceous                        | Undisturbed                |
| 235                         | Corinth         | Alcorn           | Miss. | 34°55' | 88°31' | 490       | IVC3                 | Level      | Terrace flat       | 0       | Poor           | Herbaceous                        | Hay                        |
| 236                         | Selmer          | McNairy          | Tenn. | 35°09' | 88°35' | 410       | IIIC1*               | Level      | Terrace flat       | 0       | Poor           | Herbaceous                        | Grazed                     |
| 237                         | Selmer          | McNairy          | Tenn. | 35°11' | 88°36' | 410       | IVC3                 | Northwest  | Upland ridge       | 3       | Good           | Hardwood forest                   | Undisturbed                |
| 238                         | Jackson         | Madison          | Tenn. | 35°37' | 88°51' | 400       | IIIB1*               | Level      | Bottom flat        | 0       | Poor           | Herbaceous                        | Grazed                     |
| 239                         | Jackson         | Madison          | Tenn. | 35°37' | 88°51' | 400       | IIIC1                | Northwest  | Terrace slope      | 20      | Good           | Herbaceous                        | Grazed                     |
| 240                         | Jackson         | Madison          | Tenn. | 35°37' | 88°51' | 400       | IIIC1                | South      | Terrace slope      | 3       | Medium         | Herbaceous                        | Cultivated (grazed)        |
| 241                         | Jackson         | Madison          | Tenn. | 35°37' | 88°51' | 400       | IIIC1                | Southeast  | Terrace slope      | 3       | Poor           | Herbaceous                        | Hay                        |
| 242                         | Brownsville     | Haywood          | Tenn. | 35°36' | 89°14' | 360       | IVC3*                | Southeast  | Upland upper slope | 6       | Good           | Herbaceous with some trees        | Undisturbed                |

\* Engineering Conference Land Form questionable.

(Continued)



Table B1 (Continued)

| Site No.                    | Weather Station | County or Parish | State | Lat    | Long.  | Elev. ft. | Eng. Conf. Land Form | Topography |                    |         | Wetness Index  | Vegetation  | Land Use            |
|-----------------------------|-----------------|------------------|-------|--------|--------|-----------|----------------------|------------|--------------------|---------|----------------|---|---------------------|
|                             |                 |                  |       |        |        |           |                      | Aspect     | Position           | Slope % |                |   |                     |
| Southern Region (Continued) |                 |                  |       |        |        |           |                      |            |                    |         |                |   |                     |
| 243                         | Brownsville     | Haywood          | Tenn. | 35°15' | 89°16' | 360       | IIB1                 | Level      | Bottom flat        | 0       | Poor           | Herbaceous  | Cultivated (idle)   |
| 244                         | Moscow          | Payette          | Tenn. | 35°06' | 89°21' | 352       | IVC3                 | West       | Upland upper slope | 6       | Good           | Hardwood forest                                       | Undisturbed         |
| 245                         | Moscow          | Payette          | Tenn. | 35°04' | 89°22' | 352       | IIB1                 | Level      | Bottom flat        | 0       | Poor           | Herbaceous  | Lawn                |
| 246                         | Holly Springs   | Marshall         | Miss. | 34°49' | 89°26' | 485       | IIIA2*               | Level      | Upland flat        | 0       | Poor           | Herbaceous  | Grazed              |
| 247                         | Holly Springs   | Marshall         | Miss. | 34°49' | 89°26' | 485       | IIIA1*               | Level      | Upland flat        | 0       | Poor           | Herbaceous  | Grazed              |
| 248                         | Holly Springs   | Marshall         | Miss. | 34°49' | 89°26' | 485       | IIIA1*               | Level      | Upland flat        | 0       | Poor           | Herbaceous  | Grazed              |
| 249                         | Holly Springs   | Marshall         | Miss. | 34°49' | 89°26' | 485       | IIIA1*               | Level      | Upland upper slope | 3       | Good           | Herbaceous forest                                     | Undisturbed         |
| 250                         | Sardis Dam      | Paulina          | Miss. | 34°25' | 89°48' | 234       | IIIA1*               | North      | Upland upper slope | 3       | Good           | Herbaceous forest                                     | Undisturbed         |
| 251                         | Sardis Dam      | Paulina          | Miss. | 34°24' | 89°48' | 234       | IIIA1*               | Level      | Bottom flat        | 0       | Poor           | Herbaceous forest                                     | Undisturbed         |
| 252                         | Sardis Dam      | Paulina          | Miss. | 34°21' | 89°46' | 234       | IIIA1*               | East       | Upland upper slope | 3       | Good           | Herbaceous forest                                     | Undisturbed         |
| 253                         | Batesville      | Paulina          | Miss. | 34°16' | 89°46' | 234       | IIIA1*               | East       | Upland upper slope | 3       | Good           | Herbaceous forest                                     | Undisturbed         |
| 254                         | Batesville      | Paulina          | Miss. | 34°16' | 89°46' | 234       | IIIA1*               | Level      | Terrace flat       | 0       | Poor           | Herbaceous forest                                     | Undisturbed         |
| 255                         | Batesville      | Paulina          | Miss. | 34°16' | 89°46' | 234       | IIIA1*               | Level      | Terrace flat       | 0       | Poor           | Herbaceous forest                                     | Undisturbed         |
| 256                         | Batesville      | Paulina          | Miss. | 34°19' | 90°03' | 230       | IIIA1*               | Level      | Bottom flat        | 0       | Poor           | Herbaceous forest                                     | Undisturbed         |
| 257                         | Lambert         | Quitman          | Miss. | 34°16' | 90°16' | 159       | IIB1                 | Level      | Terrace flat       | 0       | Poor to medium | Herbaceous forest                                     | Grazed              |
| 258                         | Lambert         | Quitman          | Miss. | 34°15' | 90°16' | 159       | IIB1/b               | Level      | Terrace flat       | 0       | Poor           | Herbaceous forest                                     | Lawn                |
| 259                         | Lambert         | Quitman          | Miss. | 34°14' | 90°17' | 159       | IIB1/b               | Level      | Bottom flat        | 0       | Poor           | Cypress, gum, elm, and hackberry                      | Undisturbed         |
| 260                         | Lambert         | Quitman          | Miss. | 34°09' | 90°20' | 159       | IIB1                 | Level      | Bottom flat        | 0       | Poor           | Grazed  | Grazed              |
| 261                         | Vance           | Quitman          | Miss. | 34°04' | 90°20' | 150       | IIIC1*               | Level      | Terrace flat       | 0       | Poor           | Pecan grove, herbaceous                               | Grazed              |
| 301                         | Chatham         | Washington       | Ala.  | 31°28' | 88°16' | 195       | IVC3*                | North      | Upland upper slope | 15      | Good           | Slash pine and red oak                                | Undisturbed         |
| 302                         | Chatham         | Washington       | Ala.  | 31°27' | 88°16' | 195       | IVC3*                | Level      | Upland flat        | 0       | Poor           | Mixed pine and oak                                    | Undisturbed         |
| 303                         | Chatham         | Washington       | Ala.  | 31°27' | 88°16' | 195       | IVC3*                | South      | Upland upper slope | 5       | Good           | Herbaceous with some trees                            | Grazed              |
| 304                         | Jackson         | Washington       | Ala.  | 31°31' | 87°56' | 10        | IIB1                 | Level      | Bottom flat        | 0       | Medium         | Herbaceous  | Grazed              |
| 305                         | Jackson         | Clarke           | Ala.  | 31°31' | 87°55' | 10        | IIIC1*               | South      | Upland flat        | 6       | Good           | Herbaceous forest, hardwood and pine understory       | Undisturbed         |
| 306                         | Jackson         | Clarke           | Ala.  | 31°33' | 87°53' | 170       | IVC3*                | Southeast  | Upland upper slope | 5       | Good           | Herbaceous  | Grazed              |
| 307                         | Thomasville     | Clarke           | Ala.  | 31°46' | 87°45' | 170       | IVC3*                | West       | Upland upper slope | 12      | Good           | Pine forest   | Undisturbed         |
| 308                         | Thomasville     | Clarke           | Ala.  | 31°48' | 87°45' | 170       | IVC2*                | North      | Upland upper flat  | 5       | Good           | Loblolly pine and dogwood, hickory and oak understory | Undisturbed         |
| 309                         | Whitley         | Clarke           | Ala.  | 31°39' | 87°42' | 170       | IIIC1*               | South      | Upland upper slope | 20      | Good           | Pine forest   | Undisturbed         |
| 310                         | Claborn         | Monroe           | Ala.  | 31°33' | 87°31' | 183       | IIIC1*               | East       | Terrace slope      | 4       | Good           | Herbaceous  | Grazed              |
| 311                         | Claborn         | Monroe           | Ala.  | 31°32' | 87°30' | 183       | IIIC1*               | Level      | Upland flat        | 0       | Poor           | Herbaceous  | Cultivated (grazed) |
| 312                         | Evergreen       | Conecuh          | Ala.  | 31°24' | 87°01' | 252       | IVC3*                | North      | Upland upper slope | 5       | Good           | Herbaceous with some trees                            | Cultivated (idle)   |
| 313                         | Evergreen       | Conecuh          | Ala.  | 31°25' | 86°56' | 252       | IVC3*                | North      | Upland upper slope | 15      | Good           | Mixed hardwood and pine                               | Undisturbed         |
| 314                         | Evergreen       | Conecuh          | Ala.  | 31°25' | 86°56' | 252       | IIIB1*               | Level      | Bottom flat        | 0       | Poor           | Herbaceous  | Grazed              |
| 315                         | Elba            | Coffee           | Ala.  | 31°25' | 86°04' | 204       | IVC3*                | Southeast  | Upland upper slope | 20      | Good           | Herbaceous  | Cultivated (idle)   |
| 316                         | Headland        | Henry            | Ala.  | 31°21' | 85°20' | 370       | IVC3*                | Level      | Upland flat        | 0       | Good           | Herbaceous  | Lawn                |
| 317                         | Headland        | Henry            | Ala.  | 31°22' | 85°19' | 370       | IVC3*                | Level      | Upland flat        | 0       | Good           | Herbaceous  | Grazed              |
| 318                         | Headland        | Henry            | Ala.  | 31°18' | 85°21' | 370       | IVC3*                | Northeast  | Upland upper slope | 8       | Good           | Herbaceous  | Grazed              |
| 319                         | Dothan          | Houston          | Ala.  | 31°15' | 85°26' | 321       | IVC3*                | Level      | Bottom flat        | 0       | Poor           | Cypress forest  | Undisturbed         |
| 320                         | Dothan          | Houston          | Ala.  | 31°14' | 85°26' | 321       | IVC3*                | Level      | Upland flat        | 0       | Good           | Planted pine  | Undisturbed         |
| 321                         | Marlana         | Jackson          | Fla.  | 30°48' | 85°18' | 110       | IVC3*                | Southeast  | Upland upper slope | 5       | Good           | Herbaceous  | Grazed              |
| 322                         | Marlana         | Jackson          | Fla.  | 30°48' | 85°15' | 110       | IVC3*                | Level      | Upland depression  | 0       | Poor           | Mixed hardwood - pine brush understory                | Undisturbed         |
| 323                         | Marlana         | Jackson          | Fla.  | 30°45' | 85°09' | 110       | IVC2*                | Level      | Upland flat        | 0       | Medium         | Pine forest   | Grazed              |
| 324                         | Chattahoochee   | Gadsden          | Fla.  | 30°42' | 84°51' | 90        | IIB1*                | Level      | Bottom flat        | 0       | Poor to medium | Oak willow, brush understory                          | Undisturbed         |
| 325                         | Chattahoochee   | Gadsden          | Fla.  | 30°42' | 84°50' | 90        | IVC2*                | South      | Upland upper slope | 12      | Good           | Planted slash pine                                    | Undisturbed         |
| 326                         | Chattahoochee   | Gadsden          | Fla.  | 30°42' | 84°50' | 90        | IIIC1*               | Level      | Terrace flat       | 0       | Good to medium | Herbaceous with some trees                            | Hay                 |
| 327                         | Quincy          | Gadsden          | Fla.  | 30°36' | 84°34' | 250       | IVC3*                | Level      | Upland flat        | 0       | Medium         | Herbaceous  | Cultivated (idle)   |
| 328                         | Tallahassee     | Leon             | Fla.  | 30°27' | 84°14' | 64        | IVC*                 | South      | Upland upper slope | 3       | Good to medium | Slash pine with herbaceous understory                 | Undisturbed         |
| 329                         | Tallahassee     | Leon             | Fla.  | 30°27' | 84°14' | 64        | IIIC1*               | Level      | Bottom depression  | 0       | Poor to medium | Herbaceous  | Grazed              |

(Continued)

\* Engineering Conference Land Form questionable.



Table B1. (Continued)

| Site No.                    | Weather Station | County or Parish | State | Lat    | Long.  | Elev. ft. | Eng. Cont. Land Form | Topography |                    |    | Wetness Index  | Vegetation | Land Use  |                   |
|-----------------------------|-----------------|------------------|-------|--------|--------|-----------|----------------------|------------|--------------------|----|----------------|------------|---|-------------------|
|                             |                 |                  |       |        |        |           |                      | Aspect     | Slope              |    |                |            |   | Drainage          |
|                             |                 |                  |       |        |        |           |                      |            | Position           | %  |                |            |   |                   |
| Southern Region (Continued) |                 |                  |       |        |        |           |                      |            |                    |    |                |            |   |                   |
| 330                         | Monticello      | Jefferson        | Fla.  | 30°32' | 83°50' | 202       | IVC *                | Level      | Upland depression  | 0  | Poor to medium | 2          | Mixed pine - hardwood                               | Undisturbed       |
| 331                         | Monticello      | Jefferson        | Fla.  | 30°32' | 83°50' | 202       | IVC *                | Level      | Upland flat        | 0  | Good           | 2          | Herbaceous  | Grazed            |
| 332                         | Monticello      | Jefferson        | Fla.  | 30°31' | 83°48' | 202       | IVC *                | Level      | Upland flat        | 0  | Poor           | 3          | Longleaf pine, palmetto and bracken fern understory | Undisturbed       |
| 333                         | Madison         | Madison          | Fla.  | 30°28' | 83°29' | 145       | IVC *                | South      | Upland upper slope | 12 | Good           | 2          | Planted slash pine                                  | Undisturbed       |
| 334                         | Madison         | Madison          | Fla.  | 30°30' | 83°22' | 145       | IVC *                | Southwest  | Upland upper slope | 3  | Good           | 2          | Herbaceous, hay and oats                            | Cultivated (idle) |
| 335                         | Valdosta        | Lovades          | Ga.   | 30°52' | 83°17' | 200       | IIIC *               | Level      | Upland flat        | 0  | Medium         | 2          | Herbaceous  | Cultivated (idle) |
| 336                         | Valdosta        | Lovades          | Ga.   | 30°54' | 83°17' | 200       | IIIC *               | Level      | Upland depression  | 0  | Poor           | 2          | Slash pine, herbaceous understory                   | Undisturbed       |
| 337                         | Alapaha         | Berrien          | Ga.   | 31°21' | 83°13' | 293       | IIIC *               | Level      | Upland flat        | 0  | Poor to medium | 2          | Pine forest, herbaceous understory                  | Grazed            |
| 338                         | Alapaha         | Berrien          | Ga.   | 31°21' | 83°13' | 293       | IIIC *               | Level      | Upland flat        | 0  | Poor           | 2          | Herbaceous  | Grazed            |
| 339                         | Tifton          | Tift             | Ga.   | 31°26' | 83°29' | 370       | IIIC *               | Level      | Terrace flat       | 0  | Poor           | 4          | Herbaceous  | Undisturbed       |
| 340                         | Tifton          | Tift             | Ga.   | 31°29' | 83°31' | 370       | IVC *                | Southwest  | Upland upper slope | 5  | Good           | 2          | Herbaceous  | Grazed            |
| 341                         | Cordele         | Crisp            | Ga.   | 31°57' | 83°47' | 310       | IVC3                 | North      | Upland upper slope | 5  | Good           | 2          | Herbaceous  | Undisturbed       |
| 342                         | Cordele         | Crisp            | Ga.   | 31°57' | 83°47' | 310       | IVC3 *               | Level      | Upland depression  | 0  | Poor           | 2          | Slash pine, herbaceous understory                   | Undisturbed       |
| 343                         | Cordele         | Crisp            | Ga.   | 31°58' | 83°48' | 310       | IVC3 *               | Level      | Upland flat        | 0  | Medium         | 2          | Herbaceous  | Cultivated (idle) |
| 344                         | Asheville       | Sumter           | Ga.   | 32°04' | 84°14' | 450       | IVC3                 | Southwest  | Upland flat        | 3  | Good           | 2          | Planted pine  | Undisturbed       |
| 345                         | Asheville       | Sumter           | Ga.   | 32°04' | 84°15' | 450       | IVC3                 | South      | Upland upper slope | 4  | Good           | 2          | Herbaceous  | Cultivated (idle) |
| 346                         | Asheville       | Sumter           | Ga.   | 32°04' | 84°16' | 450       | IVC3                 | North      | Upland upper slope | 5  | Good           | 2          | Herbaceous  | Cultivated (idle) |
| 347                         | Eufaula         | Quitman          | Ga.   | 31°53' | 85°35' | 290       | IIIC1                | Level      | Terrace flat       | 0  | Poor           | 4          | Herbaceous  | Grazed            |
| 348                         | Eufaula         | Barbour          | Ala.  | 31°53' | 85°08' | 254       | IVC3 *               | Level      | Upland flat        | 0  | Good           | 2          | Herbaceous with some trees                          | Undisturbed       |
| 349                         | Eufaula         | Barbour          | Ala.  | 31°53' | 85°08' | 254       | IVC3                 | South      | Upland upper slope | 8  | Good           | 2          | Slash and shortleaf pine, herbaceous understory     | Undisturbed       |
| 350                         | Midway          | Bullock          | Ala.  | 32°03' | 85°29' | 490       | IVC5                 | South      | Upland upper slope | 8  | Good           | 4          | Shortleaf pine, herbaceous understory               | Undisturbed       |
| 351                         | Midway          | Bullock          | Ala.  | 32°05' | 85°31' | 490       | IIIB1 *              | Level      | Bottom flat        | 0  | Poor           | 4          | Herbaceous  | Cultivated (idle) |
| 352                         | Union Springs   | Bullock          | Ala.  | 32°03' | 85°37' | 390       | IVC3                 | South      | Upland upper slope | 6  | Good           | 4          | Shortleaf and loblolly pine, herbaceous understory  | Grazed            |
| 353                         | Union Springs   | Bullock          | Ala.  | 32°03' | 85°40' | 380       | IVC3                 | North      | Upland upper slope | 15 | Good           | 2          | Shortleaf and loblolly pine                         | Undisturbed       |
| 354                         | Union Springs   | Bullock          | Ala.  | 32°03' | 85°45' | 380       | IIIB1                | South      | Bottom flat        | 4  | Poor           | 2          | Herbaceous  | Grazed            |
| 355                         | Selma           | Dallas           | Ala.  | 32°25' | 87°00' | 147       | IIIC1 *              | Level      | Terrace flat       | 0  | Poor           | 4          | Shortleaf pine, herbaceous understory               | Grazed            |
| 356                         | Selma           | Dallas           | Ala.  | 32°25' | 87°00' | 147       | IIIC1 *              | Level      | Terrace flat       | 0  | Medium         | 2          | Herbaceous  | Grazed            |
| 357                         | Selma           | Dallas           | Ala.  | 32°27' | 87°02' | 147       | IIIC1 *              | Level      | Terrace flat       | 0  | Poor           | 4          | Herbaceous  | Undisturbed       |
| 358                         | Marian Junction | Dallas           | Ala.  | 32°27' | 87°08' | 204       | IIIC1 *              | Level      | Terrace flat       | 0  | Poor           | 4          | Loblolly pine, herbaceous understory                | Undisturbed       |
| 359                         | Marian Junction | Dallas           | Ala.  | 32°27' | 87°15' | 204       | IVAG *               | East       | Upland upper slope | 6  | Good           | 3          | Herbaceous  | Grazed            |
| 360                         | Marian Junction | Dallas           | Ala.  | 32°27' | 87°15' | 204       | IIIB1 *              | Level      | Bottom flat        | 0  | Poor           | 3          | Herbaceous  | Grazed            |
| 361                         | Uniontown       | Perry            | Ala.  | 32°29' | 87°31' | 273       | IVAG5                | Southwest  | Upland upper slope | 8  | Good           | 3          | Herbaceous  | Grazed            |
| 362                         | Uniontown       | Perry            | Ala.  | 32°29' | 87°31' | 273       | IVAG5                | East       | Upland upper slope | 8  | Good           | 3          | Herbaceous  | Grazed            |
| 363                         | Demopolis       | Marion           | Ala.  | 32°30' | 87°46' | 100       | IVAG5                | East       | Upland flat        | 3  | Good           | 3          | Herbaceous  | Grazed            |
| 364                         | Demopolis       | Marion           | Ala.  | 32°29' | 87°48' | 100       | IVC3 *               | Level      | Upland flat        | 0  | Poor           | 4          | Hardwood forest                                     | Undisturbed       |
| 365                         | Livingston      | Sumter           | Ala.  | 32°35' | 88°11' | 160       | IIIC1                | Level      | Terrace flat       | 0  | Poor           | 3          | Herbaceous  | Grazed            |
| 366                         | Livingston      | Sumter           | Ala.  | 32°35' | 88°12' | 160       | IIIC1                | West       | Terrace flat       | 3  | Poor           | 4          | Mixed pine - hardwood                               | Undisturbed       |
| 367                         | Livingston      | Sumter           | Ala.  | 32°35' | 88°13' | 160       | IIIC1 *              | Level      | Upland flat        | 0  | Good to medium | 3          | Loblolly pine, herbaceous understory                | Undisturbed       |
| 368                         | Cuba            | Sumter           | Ala.  | 32°29' | 88°24' | 215       | IIIB1                | Level      | Bottom flat        | 0  | Poor           | 4          | Hardwood forest                                     | Undisturbed       |
| 369                         | Cuba            | Sumter           | Ala.  | 32°29' | 88°24' | 215       | IVC3 *               | South      | Upland upper slope | 10 | Good           | 3          | 20-yr loblolly pine                                 | Undisturbed       |

\* Engineering Conference Land Form questionable.



Table B1 (Continued)

| Site No.            | Weather Station | County or Parish | State | Lat.   | Long.  | Elev. ft. | Soil Form     | Aspect             | Topography |         |          | Wetness Index                       | Vegetation         | Land Use |
|---------------------|-----------------|------------------|-------|--------|--------|-----------|---------------|--------------------|------------|---------|----------|-------------------------------------|--------------------|----------|
|                     |                 |                  |       |        |        |           |               |                    | Position   | Slope % | Drainage |                                     |                    |          |
| Northeastern Region |                 |                  |       |        |        |           |               |                    |            |         |          |                                     |                    |          |
| 1                   | Berwick         | Luzerne          | Pa.   | 41°11' | 76°04' | 620       | IBL Level     | Bottom flat        | 0          | Medium  | 3        | Herbaceous                          | Fallow             |          |
| 2                   | Berwick         | Luzerne          | Pa.   | 41°11' | 76°04' | 620       | IBL Level     | Bottom flat        | 0          | Medium  | 2        | Fire cherry, sycamore and hickory   | Undisturbed        |          |
| 3                   | Berwick         | Luzerne          | Pa.   | 41°11' | 76°04' | 640       | IBL South     | Terrace slope      | 5          | Good    | 2        | Sumac with herbaceous understory    | Undisturbed        |          |
| 4                   | Pikes Creek     | Luzerne          | Pa.   | 41°16' | 76°04' | 1100      | IV4* North    | Upland upper slope | 3          | Good    | 2        | Hardwood forest                     | Undisturbed        |          |
| 5                   | Pikes Creek     | Luzerne          | Pa.   | 41°16' | 76°04' | 1200      | VC3* Level    | Bottom flat        | 0          | Poor    | 4        | baceous                             | Undisturbed (idle) |          |
| 6                   | Pikes Creek     | Luzerne          | Pa.   | 41°16' | 76°05' | 1180      | IBL South     | Upland upper slope | 3          | Good    | 2        | Hardwood forest                     | Undisturbed        |          |
| 7                   | Dixon           | Wyoming          | Pa.   | 41°36' | 75°51' | 660       | IBL South     | Terrace slope      | 10         | Good    | 2        | Herbaceous                          | Fallow             |          |
| 8                   | Dixon           | Wyoming          | Pa.   | 41°36' | 75°51' | 660       | IBL Level     | Terrace flat       | 0          | Poor    | 4        | River birch and sycamore            | Undisturbed        |          |
| 9                   | Dixon           | Wyoming          | Pa.   | 41°32' | 75°55' | 660       | IBL Level     | Terrace flat       | 0          | Medium  | 3        | Herbaceous                          | Grass              |          |
| 10                  | State College   | Centre           | Pa.   | 40°48' | 77°50' | 1175      | IBL Level     | Terrace flat       | 0          | Medium  | 2        | Red oak forest                      | Undisturbed        |          |
| 11                  | State College   | Centre           | Pa.   | 40°48' | 77°52' | 1175      | IV1 East      | Upland ridge       | 0-3        | Fair    | 2        | Herbaceous                          | Undisturbed        |          |
| 12                  | State College   | Centre           | Pa.   | 40°50' | 77°52' | 1175      | IV1 East      | Upland upper slope | 10         | Good    | 2        | Aspen saplings                      | Undisturbed        |          |
| 13                  | State College   | Centre           | Pa.   | 40°50' | 77°52' | 1175      | IV1 East      | Upland upper slope | 10         | Good    | 2        | Red pine forest                     | Undisturbed        |          |
| 14                  | State College   | Centre           | Pa.   | 40°50' | 77°51' | 1175      | IV1 Southeast | Upland upper slope | 10         | Good    | 2        | Young planted asp, herbaceous       | Undisturbed        |          |
| 15                  | State College   | Centre           | Pa.   | 40°50' | 77°51' | 1175      | IV1 Southeast | Upland upper slope | 10         | Good    | 2        | Herbaceous with some trees          | Undisturbed        |          |
| 16                  | Huntingdon      | Huntingdon       | Pa.   | 40°32' | 77°58' | 660       | IV2 Level     | Bottom flat        | 0          | Poor    | 3        | Herbaceous                          | Fallow             |          |
| 17                  | Huntingdon      | Huntingdon       | Pa.   | 40°27' | 78°05' | 660       | IBL Level     | Bottom flat        | 0          | Poor    | 4        | Herbaceous                          | Grass              |          |
| 18                  | Saxton          | Bedford          | Pa.   | 40°14' | 78°17' | 780       | VC3 Level     | Bottom depression  | 0          | Poor    | 3        | Herbaceous                          | Fallow             |          |
| 19                  | Saxton          | Bedford          | Pa.   | 40°15' | 78°16' | 780       | IBL Level     | Bottom flat        | 0          | Poor    | 3        | White and shortleaf pine forest     | Undisturbed        |          |
| 20                  | Saxton          | Bedford          | Pa.   | 40°15' | 78°16' | 780       | IBL Level     | Bottom flat        | 0          | Poor    | 3        | Herbaceous                          | Fallow             |          |
| 21                  | Martinsburg     | Blair            | Pa.   | 40°18' | 78°20' | 1360      | VP* West      | Terrace flat       | 3          | Medium  | 2        | Pine and spruce                     | Undisturbed        |          |
| 22                  | Martinsburg     | Blair            | Pa.   | 40°18' | 78°20' | 1360      | IV1 East      | Upland upper slope | 6          | Good    | 2        | Herbaceous                          | Hay                |          |
| 23                  | Martinsburg     | Blair            | Pa.   | 40°18' | 78°20' | 1360      | IV1 East      | Upland upper slope | 6          | Good    | 2        | Herbaceous                          | Hay                |          |
| 24                  | Strongstown     | Indiana          | Pa.   | 40°32' | 78°53' | 1780      | IBL Level     | Terrace flat       | 0          | Medium  | 2        | Beech, red maple, and witch hazel   | Undisturbed        |          |
| 25                  | Strongstown     | Indiana          | Pa.   | 40°32' | 78°54' | 1780      | IV4* West     | Upland upper slope | 6          | Poor    | 2        | Herbaceous                          | Fallow             |          |
| 26                  | Strongstown     | Indiana          | Pa.   | 40°32' | 78°54' | 1780      | IV4* West     | Upland upper slope | 6          | Poor    | 2        | Hardwood forest, thick brush        | Undisturbed        |          |
| 27                  | Indiana         | Indiana          | Pa.   | 40°37' | 79°07' | 1360      | VP* West      | Upland upper slope | 10         | Medium  | 2        | Herbaceous                          | Hay (plowed)       |          |
| 28                  | Indiana         | Indiana          | Pa.   | 40°37' | 79°07' | 1340      | IBL Level     | Bottom flat        | 0          | Good    | 2        | Herbaceous                          | Grass              |          |
| 29                  | Indiana         | Indiana          | Pa.   | 40°37' | 79°07' | 1360      | VP Level      | Upland depression  | 0          | Poor    | 2        | Herbaceous                          | Undisturbed        |          |
| 30                  | Indiana         | Indiana          | Pa.   | 40°37' | 79°12' | 1300      | VP Level      | Upland lower slope | 0          | Poor    | 2        | Herbaceous                          | Fallow             |          |
| 31                  | Whiteburg       | Armstrong        | Pa.   | 40°43' | 79°22' | 1240      | VP North      | Upland lower slope | 10         | Good    | 2        | Herbaceous                          | Fallow             |          |
| 32                  | Whiteburg       | Armstrong        | Pa.   | 40°43' | 79°23' | 1060      | VP Level      | Upland lower slope | 0          | Good    | 2        | Crataegus and black cherry          | Undisturbed        |          |
| 33                  | Whiteburg       | Armstrong        | Pa.   | 40°43' | 79°23' | 1060      | VP Level      | Upland lower slope | 0          | Poor    | 2        | Crataegus and black cherry          | Undisturbed        |          |
| 34                  | East Brady      | Armstrong        | Pa.   | 40°59' | 79°38' | 1040      | IBL Level     | Bottom flat        | 0          | Poor    | 4        | Herbaceous                          | Hay                |          |
| 35                  | East Brady      | Armstrong        | Pa.   | 41°00' | 75°37' | 900       | IBL Level     | Terrace flat       | 0          | Good    | 4        | Herbaceous                          | Undisturbed        |          |
| 36                  | Headville       | Headville        | Pa.   | 41°35' | 80°07' | 1065      | IBL Level     | Terrace slope      | 3          | Poor    | 4        | Herbaceous                          | Grass              |          |
| 37                  | Headville       | Headville        | Pa.   | 41°36' | 80°08' | 1065      | IBL Level     | Terrace flat       | 0          | Medium  | 3        | Herbaceous                          | Grass              |          |
| 38                  | Headville       | Headville        | Pa.   | 41°36' | 80°08' | 1065      | IBL Level     | Terrace flat       | 0          | Poor    | 3        | Elm trees, herbaceous               | Undisturbed        |          |
| 39                  | Headville       | Headville        | Pa.   | 41°36' | 80°08' | 1065      | IBL Level     | Terrace flat       | 0          | Medium  | 3        | Herbaceous                          | Undisturbed        |          |
| 40                  | Headville       | Headville        | Pa.   | 41°45' | 80°07' | 1065      | IBL South     | Terrace slope      | 3          | Good    | 2        | Herbaceous                          | Undisturbed        |          |
| 41                  | Headville       | Headville        | Pa.   | 41°45' | 80°07' | 1065      | IBL South     | Terrace slope      | 4          | Medium  | 2        | Crabapple, herbaceous               | Undisturbed        |          |
| 42                  | Headville       | Headville        | Pa.   | 41°45' | 80°07' | 1065      | IBL South     | Terrace slope      | 4          | Medium  | 2        | Crabapple, herbaceous               | Undisturbed        |          |
| 43                  | Headville       | Headville        | Pa.   | 41°46' | 80°07' | 1065      | IBL East      | Upland lower slope | 0-4        | Medium  | 2        | Herbaceous                          | Fallow             |          |
| 44                  | Olean           | Cattaraugus      | Pa.   | 42°05' | 78°29' | 1440      | IBL Level     | Terrace flat       | 0          | Poor    | 3        | Bracken fern                        | Undisturbed        |          |
| 45                  | Olean           | Cattaraugus      | Pa.   | 42°05' | 78°29' | 1440      | IBL Level     | Terrace flat       | 0          | Good    | 2        | Aspen saplings                      | Undisturbed        |          |
| 46                  | Salamanca       | Cattaraugus      | Pa.   | 42°07' | 78°39' | 1400      | IBL Level     | Bottom flat        | 0          | Poor    | 4        | Elm and soft maple, fern understory | Undisturbed        |          |
| 47                  | Salamanca       | Cattaraugus      | Pa.   | 42°07' | 78°39' | 1400      | IBL Level     | Bottom flat        | 0          | Good    | 2        | Herbaceous                          | Undisturbed        |          |
| 48                  | Salamanca       | Cattaraugus      | Pa.   | 42°07' | 78°39' | 1400      | IBL East      | Terrace slope      | 0-3        | Medium  | 2        | Herbaceous                          | Undisturbed        |          |
| 49                  | Lockport        | Niagara          | Pa.   | 43°03' | 78°43' | 580       | IBL Level     | Upland flat        | 0          | Poor    | 4        | Tree seedlings, herbaceous          | Fallow             |          |
| 50                  | Lockport        | Niagara          | Pa.   | 43°07' | 78°43' | 580       | IBL Level     | Upland flat        | 0          | Poor    | 4        | Herbaceous                          | Fallow             |          |
| 51                  | Lockport        | Niagara          | Pa.   | 43°13' | 78°43' | 520       | IBL Level     | Upland flat        | 0          | Poor    | 4        | Herbaceous                          | Undisturbed        |          |
| 52                  | Wilson          | Niagara          | Pa.   | 43°18' | 78°48' | 270       | IC Level      | Upland flat        | 0          | Medium  | 4        | Herbaceous                          | Undisturbed        |          |
| 53                  | Wilson          | Niagara          | Pa.   | 43°18' | 78°48' | 270       | IC Level      | Upland flat        | 0          | Poor    | 4        | Herbaceous                          | Undisturbed        |          |
| 54                  | Wilson          | Niagara          | Pa.   | 43°19' | 78°48' | 270       | IC Level      | Upland flat        | 0          | Poor    | 4        | Herbaceous                          | Undisturbed        |          |
| 55                  | Wilson          | Niagara          | Pa.   | 43°19' | 78°48' | 270       | IC Level      | Upland flat        | 0          | Poor    | 4        | Herbaceous                          | Undisturbed        |          |
| 56                  | Barber          | Niagara          | Pa.   | 43°22' | 78°36' | 280       | IC* Northeast | Upland lower slope | 3-5        | Good    | 2        | Herbaceous                          | Grass              |          |

\* Engineering Conference Land Form questionnaire.



Table B1 (Continued)

| Site No.                        | Weather Station | County or Parish | State | Lat.   | Long.  | El. ft. | Eng. Cont. Land Form | Aspect    | Topography         |         |          | Wetness Index | Vegetation                          | Land Use          |
|---------------------------------|-----------------|------------------|-------|--------|--------|---------|----------------------|-----------|--------------------|---------|----------|---------------|-------------------------------------|-------------------|
|                                 |                 |                  |       |        |        |         |                      |           | Position           | Slope % | Drainage |               |                                     |                   |
| Northeastern Region (Continued) |                 |                  |       |        |        |         |                      |           |                    |         |          |               |                                     |                   |
| 57                              | Barber          | Niagara          | N. Y. | 43°21' | 78°36' | 280     | IC*                  | North     | Upland flat        | 3-5     | Good     | 2             | Barbaceous                          | Grazed            |
| 58                              | Barber          | Niagara          | N. Y. | 43°21' | 78°32' | 280     | IIIB*                | North     | Upland flat        | 3       | Medium   | 2             | Barbaceous                          | Undisturbed       |
| 59                              | Batavia         | Cenesees         | N. Y. | 43°02' | 78°15' | 840     | ID2                  | West      | Upland flat        | 0-3     | Medium   | 4             | Barbaceous                          | Hay               |
| 60                              | Batavia         | Cenesees         | N. Y. | 43°03' | 78°11' | 840     | ID2                  | Southeast | Upland flat        | 0-3     | Medium   | 4             | Barbaceous                          | Undisturbed       |
| 61                              | Batavia         | Cenesees         | N. Y. | 43°03' | 78°11' | 840     | ID2                  | Level     | Bottom flat        | 0       | Poor     | 4             | Elm, brush understory               | Undisturbed       |
| 62                              | Covington       | Tioga            | Pa.   | 41°47' | 77°04' | 1193    | IIIC1*               | Level     | Terrace flat       | 0       | Poor     | 2             | Barbaceous with some trees          | Undisturbed       |
| 63                              | Covington       | Tioga            | Pa.   | 41°46' | 77°04' | 1180    | IIIC1*               | Level     | Terrace flat       | 0       | Poor     | 2             | Barbaceous                          | Fallow            |
| 64                              | Covington       | Tioga            | Pa.   | 41°45' | 77°05' | 1180    | IIIC1*               | North     | Terrace slope      | 2       | Medium   | 2             | Shadblow and cherry trees           | Undisturbed       |
| 65                              | Watsonville     | Union            | Pa.   | 41°02' | 76°52' | 470     | IIIB1                | Level     | Terrace flat       | 4       | Good     | 2             | Barbaceous                          | Undisturbed       |
| 66                              | Watsonville     | Union            | Pa.   | 41°02' | 76°52' | 470     | IIIB1                | East      | Terrace flat       | 4       | Good     | 2             | Silver maple, herbaceous understory | Undisturbed       |
| 67                              | Watsonville     | Union            | Pa.   | 41°03' | 76°51' | 470     | IIIC1                | Level     | Terrace flat       | 0       | Poor     | 3             | Barbaceous                          | Fallow            |
| 68                              | Watsonville     | Union            | Pa.   | 41°02' | 76°51' | 470     | IIIC1                | East      | Terrace slope      | 3       | Medium   | 2             | Barbaceous                          | Undisturbed       |
| 69                              | Watsonville     | Centre           | Pa.   | 40°54' | 77°29' | 1090    | IV1*                 | South     | Upland upper slope | 10      | Good     | 2             | Barbaceous                          | Hay               |
| 70                              | Watsonville     | Centre           | Pa.   | 40°54' | 77°29' | 1090    | IV1*                 | South     | Terrace flat       | 2       | Medium   | 2             | Barbaceous with some pear trees     | Undisturbed       |
| 71                              | Watsonville     | Monroe           | N. Y. | 43°12' | 77°57' | 610     | ID2                  | South     | Upland upper slope | 10      | Good     | 2             | Barbaceous and forest               | Undisturbed       |
| 72                              | Watsonville     | Monroe           | N. Y. | 43°12' | 77°57' | 610     | ID2                  | South     | Terrace flat       | 2       | Medium   | 4             | Barbaceous                          | Fallow            |
| 73                              | Watsonville     | Monroe           | N. Y. | 43°14' | 77°56' | 445     | ID2*                 | South     | Terrace flat       | 0       | Medium   | 4             | Barbaceous                          | Undisturbed       |
| 74                              | Hilton          | Monroe           | N. Y. | 43°14' | 77°52' | 395     | ID2                  | Level     | Upland flat        | 0       | Medium   | 4             | Barbaceous                          | Undisturbed       |
| 75                              | Hilton          | Monroe           | N. Y. | 43°19' | 77°45' | 280     | ID2                  | Level     | Upland flat        | 0       | Medium   | 4             | Barbaceous                          | Undisturbed       |
| 76                              | Hilton          | Monroe           | N. Y. | 43°19' | 77°47' | 270     | ID2                  | Level     | Upland flat        | 0       | Medium   | 4             | Barbaceous                          | Undisturbed       |
| 77                              | Rochester       | Monroe           | N. Y. | 43°08' | 77°44' | 555     | VC3*                 | Level     | Terrace flat       | 0       | Poor     | 4             | Barbaceous                          | Undisturbed       |
| 78                              | Rochester       | Monroe           | N. Y. | 43°09' | 77°44' | 525     | IC*                  | Level     | Bottom flat        | 0       | Medium   | 4             | Elm and ash, herbaceous             | Undisturbed       |
| 79                              | Rochester       | Monroe           | N. Y. | 43°09' | 77°44' | 525     | IIIC1*               | Level     | Upland flat        | 0       | Medium   | 4             | Barbaceous                          | Fallow            |
| 80                              | Rochester       | Monroe           | N. Y. | 43°09' | 77°44' | 525     | IIIC1*               | East      | Terrace slope      | 5       | Good     | 2             | Barbaceous                          | Undisturbed       |
| 101                             | Danbury         | Fairfield        | Conn. | 41°23' | 73°28' | 510     | VC3                  | Level     | Bottom flat        | 0       | Poor     | 3             | Young ash, herbaceous understory    | Undisturbed       |
| 102                             | Danbury         | Fairfield        | Conn. | 41°23' | 73°28' | 510     | VC3                  | Level     | Bottom flat        | 2       | Medium   | 2             | Barbaceous                          | Hay               |
| 104                             | Watsonville     | New Haven        | Conn. | 41°25' | 72°55' | 200     | ID2*                 | East      | Upland lower slope | 5       | Medium   | 2             | Barbaceous                          | Undisturbed       |
| 105                             | Watsonville     | New Haven        | Conn. | 41°25' | 72°55' | 200     | ID2*                 | West      | Upland upper slope | 5       | Medium   | 2             | Barbaceous                          | Undisturbed       |
| 106                             | Watsonville     | New Haven        | Conn. | 41°25' | 72°55' | 200     | IIIB1                | Level     | Bottom flat        | 0       | Poor     | 3             | Sassafras                           | Undisturbed       |
| 107                             | Watsonville     | New Haven        | Conn. | 41°25' | 72°55' | 200     | IIIB1                | Level     | Bottom flat        | 0       | Poor     | 3             | Barbaceous                          | Fallow            |
| 108                             | Watsonville     | New Haven        | Conn. | 41°26' | 72°42' | 140     | IIIC1                | Level     | Terrace flat       | 0       | Poor     | 4             | Barbaceous                          | Hay               |
| 109                             | Watsonville     | New Haven        | Conn. | 41°26' | 72°42' | 140     | ID2                  | East      | Bottom flat        | 3       | Good     | 2             | Barbaceous                          | Fallow            |
| 110                             | Watsonville     | New Haven        | Conn. | 41°26' | 72°42' | 140     | IIIC2*               | West      | Terrace slope      | 3       | Good     | 2             | Barbaceous                          | Hay               |
| 111                             | Watsonville     | New Haven        | Conn. | 41°50' | 72°44' | 165     | IIIB1                | Level     | Bottom flat        | 0       | Poor     | 3             | Mixed pine - hardwood               | Undisturbed       |
| 112                             | Watsonville     | New Haven        | Conn. | 41°50' | 72°44' | 165     | IIIC1                | Level     | Terrace flat       | 0       | Medium   | 2             | Mixed pine - hardwood               | Undisturbed       |
| 113                             | Watsonville     | New Haven        | Conn. | 41°50' | 72°41' | 169     | IIIC1                | Level     | Terrace flat       | 0       | Good     | 2             | Barbaceous                          | Undisturbed       |
| 114                             | Watsonville     | New Haven        | Conn. | 41°56' | 72°41' | 169     | IIIC1                | Level     | Terrace flat       | 0       | Good     | 2             | Barbaceous forest                   | Undisturbed       |
| 115                             | Watsonville     | New Haven        | Conn. | 41°56' | 72°41' | 169     | IIIC1                | Level     | Terrace flat       | 0       | Good     | 2             | Barbaceous forest                   | Undisturbed       |
| 116                             | Watsonville     | New Haven        | Conn. | 41°56' | 72°41' | 169     | IIIC1                | Level     | Terrace flat       | 0       | Good     | 2             | Barbaceous forest                   | Undisturbed       |
| 117                             | Watsonville     | New Haven        | Conn. | 42°00' | 72°36' | 100     | IIIC1                | West      | Upland upper slope | 3       | Good     | 2             | Barbaceous                          | Hay               |
| 118                             | Watsonville     | New Haven        | Conn. | 42°00' | 72°36' | 100     | IIIC1                | West      | Upland upper slope | 3       | Good     | 2             | Barbaceous                          | Undisturbed       |
| 119                             | Watsonville     | New Haven        | Conn. | 41°58' | 72°18' | 625     | ID2                  | East      | Upland upper slope | 3       | Good     | 2             | White pine                          | Undisturbed       |
| 120                             | Watsonville     | New Haven        | Conn. | 42°03' | 72°18' | 220     | ID2                  | South     | Upland lower slope | 3       | Good     | 2             | Barbaceous                          | Undisturbed       |
| 121                             | Watsonville     | New Haven        | Conn. | 42°03' | 72°16' | 200     | ID2*                 | Level     | Terrace flat       | 0       | Good     | 2             | Barbaceous                          | Hay               |
| 122                             | Watsonville     | New Haven        | Conn. | 42°04' | 72°16' | 260     | ID2                  | Level     | Terrace flat       | 0       | Poor     | 3             | Mixed pine - hardwood               | Undisturbed       |
| 123                             | Watsonville     | New Haven        | Conn. | 42°06' | 72°16' | 240     | IIIC1                | Level     | Terrace flat       | 0       | Good     | 2             | Barbaceous                          | Undisturbed       |
| 124                             | Watsonville     | New Haven        | Conn. | 42°15' | 72°52' | 560     | IIIC1                | Level     | Terrace flat       | 0       | Poor     | 3             | Barbaceous                          | Undisturbed       |
| 125                             | Watsonville     | New Haven        | Conn. | 42°17' | 72°52' | 500     | IIIC1*               | Level     | Terrace flat       | 5       | Good     | 2             | Barbaceous                          | Undisturbed       |
| 126                             | Watsonville     | New Haven        | Conn. | 42°14' | 72°52' | 1180    | ID2                  | South     | Upland lower slope | 3       | Medium   | 4             | Barbaceous                          | Cultivated (idle) |
| 127                             | Watsonville     | New Haven        | Conn. | 42°24' | 72°51' | 1340    | ID2                  | Level     | Upland flat        | 0       | Good     | 2             | Barbaceous                          | Fallow            |
| 128                             | Watsonville     | New Haven        | Conn. | 42°24' | 72°51' | 1380    | ID2                  | South     | Upland flat        | 3       | Good     | 4             | Barbaceous                          | Undisturbed       |
| 129                             | Watsonville     | New Haven        | Conn. | 42°24' | 72°51' | 1380    | ID2                  | Level     | Upland flat        | 0       | Good     | 4             | Barbaceous                          | Undisturbed       |
| 130                             | Watsonville     | New Haven        | Conn. | 42°21' | 72°33' | 160     | IIIC1                | Level     | Bottom flat        | 0       | Medium   | 2             | Elm, oak, and maple                 | Undisturbed       |
| 131                             | Watsonville     | New Haven        | Conn. | 42°21' | 72°33' | 160     | IIIC1                | Level     | Bottom flat        | 0       | Medium   | 2             | Elm, oak, and maple                 | Undisturbed       |
| 132                             | Watsonville     | New Haven        | Conn. | 42°22' | 72°32' | 220     | IIIC1*               | Level     | Bottom flat        | 0       | Good     | 2             | Sassafras                           | Undisturbed       |
| 133                             | Watsonville     | New Haven        | Conn. | 42°31' | 72°32' | 280     | IIIC1*               | South     | Terrace flat       | 3       | Good     | 2             | Barbaceous with some trees          | Undisturbed       |
| 134                             | Watsonville     | New Haven        | Conn. | 42°34' | 72°32' | 280     | ID2                  | West      | Upland upper slope | 5       | Good     | 1             | Barbaceous                          | Undisturbed       |

(Continued)

\* Engineering Conference Land Form questionable.



Table B1 (Continued)

| Site No.                        | Weather Station | County or Parish | State | Lat.   | Long.  | Elev. ft. | Bag Conf. Land Form | Aspect    | Topography         |         |         | Drainage       |   | Wetness Index                               | Vegetation  | Land Use |
|---------------------------------|-----------------|------------------|-------|--------|--------|-----------|---------------------|-----------|--------------------|---------|---------|----------------|---|---|-------------|----------|
|                                 |                 |                  |       |        |        |           |                     |           | Position           | Slope % | Surface | Internal       |   |   |             |          |
| Northeastern Region (Continued) |                 |                  |       |        |        |           |                     |           |                    |         |         |                |   |   |             |          |
|                                 |                 | Franklin         | Mass. | 42°34' | 72°32' | 260       | HC1                 | Level     | Terrace flat       | 0       | Poor    | Good           | 4 | Herbaceous                                  | Undisturbed |          |
| 134                             | Turners Falls   | Franklin         | Mass. | 42°34' | 72°32' | 280       | HC1                 | Level     | Terrace flat       | 0       | Medium  | Good           | 2 | Pine forest                                 | Undisturbed |          |
| 135                             | Turners Falls   | Franklin         | Mass. | 42°34' | 72°32' | 280       | HC1                 | Level     | Terrace flat       | 0       | Medium  | Good           | 2 | Cherry and oak                              | Undisturbed |          |
| 136                             | Turners Falls   | Franklin         | Mass. | 42°51' | 71°40' | 300       | HD1*                | Level     | Terrace flat       | 0       | Poor    | Good           | 2 | Herbaceous                                  | Hay         |          |
| 137                             | Milford         | Hillsborough     | N. H. | 42°51' | 71°40' | 300       | HD1*                | Southwest | Terrace slope      | 3       | Good    | Good           | 2 | Herbaceous                                  | Hay         |          |
| 138                             | Milford         | Hillsborough     | N. H. | 42°51' | 71°40' | 300       | HD1*                | West      | Bottom flat        | 3       | Medium  | Poor           | 2 | Herbaceous                                  | Hay         |          |
| 139                             | Milford         | Hillsborough     | N. H. | 43°18' | 72°09' | 1020      | HD1*                | West      | Upland lower slope | 3       | Medium  | Good           | 2 | Herbaceous                                  | Undisturbed |          |
| 140                             | Newport         | Sullivan         | N. H. | 43°20' | 72°10' | 800       | HD1*                | Level     | Upland flat        | 0       | Poor    | Good           | 2 | Herbaceous                                  | Undisturbed |          |
| 141                             | Newport         | Sullivan         | N. H. | 43°21' | 72°10' | 800       | HD1*                | Level     | Upland flat        | 0       | Poor    | Good           | 2 | Herbaceous                                  | Undisturbed |          |
| 142                             | Newport         | Sullivan         | N. H. | 43°22' | 72°19' | 600       | VF                  | Level     | Upland flat        | 0       | Poor    | Good           | 2 | Hardwood forest                             | Playground  |          |
| 143                             | Claremont       | Sullivan         | N. H. | 43°27' | 72°23' | 360       | HC1                 | Level     | Terrace flat       | 0       | Poor    | Good           | 4 | Herbaceous                                  | Undisturbed |          |
| 144                             | Claremont       | Sullivan         | N. H. | 43°29' | 72°23' | 320       | HC1                 | Level     | Bottom flat        | 20      | Good    | Medium         | 3 | Herbaceous                                  | Undisturbed |          |
| 145                             | Claremont       | Sullivan         | N. H. | 43°29' | 72°23' | 320       | HD1                 | North     | Upland lower slope | 20      | Good    | Medium         | 3 | Herbaceous                                  | Undisturbed |          |
| 146                             | White River     | Windsor          | Vt.   | 43°39' | 72°21' | 360       | HD1                 | North     | Upland lower slope | 20      | Good    | Medium         | 3 | Pine, birch, and poplar                     | Undisturbed |          |
| 147                             | White River     | Windsor          | Vt.   | 43°39' | 72°21' | 360       | HD1                 | Level     | Upland flat        | 0       | Poor    | Medium         | 3 | Pine, birch, and poplar                     | Undisturbed |          |
| 148                             | Woodstock       | Windsor          | Vt.   | 43°37' | 72°32' | 800       | VF                  | Level     | Upland flat        | 0       | Poor    | Good           | 4 | Herbaceous                                  | Undisturbed |          |
| 149                             | Woodstock       | Windsor          | Vt.   | 43°37' | 72°32' | 800       | VF                  | Level     | Upland flat        | 0       | Poor    | Good           | 4 | Young maple                                 | Undisturbed |          |
| 150                             | Woodstock       | Windsor          | Vt.   | 43°37' | 72°32' | 800       | HD1                 | North     | Upland lower slope | 5       | Good    | Medium         | 4 | Herbaceous                                  | Hay         |          |
| 151                             | Schuylerville   | Saratoga         | N. Y. | 43°06' | 73°35' | 260       | IC*                 | Level     | Upland flat        | 0       | Poor    | Good           | 3 | Herbaceous                                  | Undisturbed |          |
| 152                             | Schuylerville   | Saratoga         | N. Y. | 43°06' | 73°35' | 260       | IC*                 | Level     | Upland flat        | 0       | Poor    | Medium         | 4 | Post oak, herbaceous understory             | Undisturbed |          |
| 153                             | Schuylerville   | Saratoga         | N. Y. | 43°06' | 73°35' | 200       | HC1*                | East      | Terrace slope      | 3       | Good    | Good           | 2 | Small ash, brush, and herbaceous understory | Undisturbed |          |
| 154                             | Schaghticoke    | Rensselaer       | N. Y. | 42°55' | 73°37' | 300       | HC1                 | West      | Terrace slope      | 5       | Good    | Good           | 2 | Herbaceous                                  | Undisturbed |          |
| 155                             | Schaghticoke    | Rensselaer       | N. Y. | 42°55' | 73°37' | 300       | HC1                 | Level     | Terrace flat       | 0       | Medium  | Poor           | 2 | Young elm                                   | Undisturbed |          |
| 156                             | Schaghticoke    | Rensselaer       | N. Y. | 42°55' | 73°36' | 380       | IC*                 | Level     | Terrace flat       | 0       | Poor    | Poor           | 4 | Elm and grey birch, brush understory        | Undisturbed |          |
| 158                             | Schenectady     | Schenectady      | N. Y. | 42°52' | 73°53' | 420       | HD2*                | Level     | Upland flat        | 0       | Medium  | Medium         | 2 | Hardwood forest                             | Undisturbed |          |
| Lake States Region              |                 |                  |       |        |        |           |                     |           |                    |         |         |                |   |   |             |          |
|                                 |                 | Marathon         | Wis.  | 45°00' | 89°30' | 1220      | HD2*                | North     | Upland upper slope | 4       | Good    | Good           | 2 | Herbaceous                                  | Hay         |          |
| 1                               | Wausau          | Marathon         | Wis.  | 45°00' | 89°30' | 1220      | HD1*                | East      | Terrace flat       | 12      | Good    | Good           | 2 | Hardwood forest                             | Undisturbed |          |
| 2                               | Wausau          | Portage          | Wis.  | 44°30' | 89°30' | 1079      | HD1*                | Level     | Bottom flat        | 0       | Medium  | Good           | 2 | Herbaceous                                  | Undisturbed |          |
| 3                               | Stevens Point   | Portage          | Wis.  | 44°30' | 89°30' | 1079      | HD1*                | Level     | Bottom flat        | 0       | Medium  | Good           | 2 | Herbaceous                                  | Hay         |          |
| 4                               | Stevens Point   | Portage          | Wis.  | 44°30' | 89°30' | 1079      | HD1*                | West      | Bottom flat        | 0-2     | Medium  | Good           | 2 | Herbaceous                                  | Undisturbed |          |
| 5                               | Hancock         | Waushara         | Wis.  | 44°15' | 89°30' | 1080      | HD2*                | East      | Upland flat        | 0-2     | Medium  | Good           | 2 | Herbaceous                                  | Undisturbed |          |
| 6                               | Hancock         | Waushara         | Wis.  | 44°15' | 89°30' | 1080      | HD2*                | East      | Upland slope       | 2-4     | Medium  | Good           | 2 | Hardwood forest                             | Undisturbed |          |
| 7                               | Hancock         | Waushara         | Wis.  | 44°15' | 89°30' | 1080      | HD2*                | South     | Upland flat        | 3-5     | Medium  | Good           | 2 | Hardwood forest                             | Undisturbed |          |
| 8                               | Hancock         | Waushara         | Wis.  | 44°15' | 89°30' | 1080      | HD1*                | Level     | Upland flat        | 0       | Medium  | Good           | 2 | Herbaceous                                  | Grazed      |          |
| 9                               | Hancock         | Waushara         | Wis.  | 44°15' | 89°30' | 1080      | HD1*                | Level     | Upland flat        | 0       | Medium  | Good           | 2 | Herbaceous                                  | Grazed      |          |
| 10                              | Arlington       | Columbia         | Wis.  | 43°15' | 89°30' | 1040      | HD2*                | North     | Upland slope       | 12      | Good    | Good           | 2 | Herbaceous                                  | Hay         |          |
| 11                              | Arlington       | Columbia         | Wis.  | 43°15' | 89°30' | 1040      | HD2*                | South     | Upland upper slope | 15      | Good    | Medium         | 2 | Herbaceous                                  | Undisturbed |          |
| 12                              | Arlington       | Columbia         | Wis.  | 43°15' | 89°30' | 1040      | HD2*                | South     | Upland slope       | 20      | Good    | Good           | 2 | Hardwood forest                             | Undisturbed |          |
| 13                              | Arlington       | Columbia         | Wis.  | 44°15' | 89°30' | 1040      | HD2*                | South     | Upland slope       | 5-7     | Good    | Good           | 2 | Herbaceous                                  | Hay         |          |
| 14                              | Arlington       | Columbia         | Wis.  | 44°15' | 89°30' | 1040      | HD2*                | East      | Upland flat        | 2       | Good    | Medium         | 2 | Herbaceous                                  | Undisturbed |          |
| 15                              | Stroughton      | Dane             | Wis.  | 43°00' | 89°15' | 900       | HD2*                | East      | Upland slope       | 3-4     | Good    | Good           | 2 | Herbaceous                                  | Hay         |          |
| 16                              | Stroughton      | Dane             | Wis.  | 43°00' | 89°15' | 900       | HD2*                | Level     | Upland upper flat  | 0       | Medium  | Medium         | 2 | Herbaceous                                  | Grazed      |          |
| 17                              | Stroughton      | Dane             | Wis.  | 43°00' | 89°15' | 900       | HD1*                | North     | Upland upper slope | 4-5     | Good    | Good           | 2 | Herbaceous                                  | Hay         |          |
| 18                              | Rockford        | Winnebago        | Ill.  | 42°30' | 89°00' | 750       | HD1*                | South     | Terrace flat       | 0-1     | Good    | Medium         | 2 | Barley and vinegrasses                      | Cultivated  |          |
| 19                              | Rockford        | Winnebago        | Ill.  | 42°30' | 89°00' | 750       | HD1*                | Level     | Terrace flat       | 0       | Good    | Good           | 2 | Herbaceous                                  | Lawn        |          |
| 20                              | Rockford        | Winnebago        | Ill.  | 42°30' | 89°00' | 750       | HD2*                | West      | Upland slope       | 5-7     | Good    | Good           | 2 | Herbaceous                                  | Undisturbed |          |
| 21                              | Rockford        | Winnebago        | Ill.  | 42°30' | 89°00' | 750       | HD1*                | North     | Upland upper flat  | 2-3     | Good    | Good           | 2 | Herbaceous                                  | Undisturbed |          |
| 22                              | Rockford        | Winnebago        | Ill.  | 42°30' | 89°00' | 750       | HD1*                | South     | Upland upper flat  | 3-5     | Good    | Good to medium | 2 | Herbaceous                                  | Undisturbed |          |
| 23                              | Rochelle        | Ogle             | Ill.  | 42°00' | 89°00' | 800       | HD1*                | Level     | Upland upper flat  | 3       | Medium  | Good to medium | 2 | Herbaceous                                  | Hay         |          |
| 24                              | Rochelle        | Ogle             | Ill.  | 42°00' | 89°00' | 800       | HD1*                | Level     | Upland upper flat  | 3       | Medium  | Good to medium | 2 | Herbaceous                                  | Undisturbed |          |
| 25                              | Paw Paw         | Lee              | Ill.  | 41°45' | 89°00' | 950       | HD1*                | Northeast | Upland upper flat  | 0-2     | Medium  | Good to medium | 2 | Herbaceous                                  | Undisturbed |          |

(Continued)

\* Engineering Conference Land Form questionable.



Table B1 (Continued)

| Site No.                       | Weather Station | County or Parish | State | Lat    | Long.  | Elev. ft. | Soil Form | Aspect    | Topography         |         |          | Wetness Index | Vegetation            | Land Use            |
|--------------------------------|-----------------|------------------|-------|--------|--------|-----------|-----------|-----------|--------------------|---------|----------|---------------|-----------------------|---------------------|
|                                |                 |                  |       |        |        |           |           |           | Position           | Slope % | Drainage |               |                       |                     |
| Lake States Region (Continued) |                 |                  |       |        |        |           |           |           |                    |         |          |               |                       |                     |
| 26                             | Paw Paw         | Lee              | Ill.  | 41°45' | 89°00' | 930       | IIIA2*    | Southeast | Upland upper flat  | 2-3     | Good     | 3             | Herbaceous            | Hay                 |
| 27                             | Princeton       | Bureau           | Ill.  | 41°30' | 89°30' | 700       | IIIB1*    | Level     | Terrace flat       | 0       | Medium   | 3             | Herbaceous            | Undisturbed         |
| 28                             | Geneseo         | Henry            | Ill.  | 41°30' | 90°15' | 639       | IIIA2*    | Level     | Upland upper flat  | 0       | Good     | 3             | Herbaceous            | Hay                 |
| 29                             | Geneseo         | Henry            | Ill.  | 41°30' | 90°15' | 639       | IIIA2*    | South     | Bottomland flat    | 0-2     | Medium   | 2             | Herbaceous            | Undisturbed         |
| 30                             | Geneseo         | Henry            | Ill.  | 41°30' | 90°15' | 639       | IIIB1*    | South     | Upland upper slope | 5-8     | Good     | 2             | Herbaceous            | Undisturbed         |
| 31                             | Maquoketa       | Jackson          | Iowa  | 42°15' | 90°30' | 600       | IIIA1*    | Northwest | Upland upper slope | 5-8     | Good     | 2             | Herbaceous            | Hay                 |
| 32                             | Maquoketa       | Jackson          | Iowa  | 42°15' | 90°30' | 600       | IIIA1*    | South     | Upland ridge       | 5-8     | Good     | 2             | Herbaceous            | Hay                 |
| 33                             | Bellevue        | Jackson          | Iowa  | 42°30' | 90°30' | 603       | IIIB2*    | Level     | Terrace flat       | 0       | Medium   | 3             | Herbaceous            | Grazed              |
| 34                             | Bellevue        | Jackson          | Iowa  | 42°30' | 90°30' | 603       | IIIB2*    | Level     | Terrace flat       | 0-2     | Medium   | 3             | Herbaceous            | Hay                 |
| 35                             | Bellevue        | Jackson          | Iowa  | 42°30' | 90°30' | 603       | IIIA1*    | East      | Terrace flat       | 1-3     | Medium   | 4             | Herbaceous            | Cultivated (grazed) |
| 36                             | Bellevue        | Jackson          | Iowa  | 42°30' | 90°30' | 603       | IIIA1*    | East      | Terrace flat       | 0-5     | Medium   | 4             | Herbaceous            | Undisturbed         |
| 37                             | Lancaster       | Grant            | Wis.  | 42°45' | 90°45' | 1080      | IIIA2*    | East      | Upland upper slope | 10-12   | Good     | 2             | Herbaceous            | Grazed              |
| 38                             | Lancaster       | Grant            | Wis.  | 42°45' | 90°45' | 1080      | IIIA1*    | Southwest | Upland ridge       | 10-12   | Good     | 2             | Herbaceous            | Undisturbed         |
| 39                             | Lancaster       | Grant            | Wis.  | 42°45' | 90°45' | 1080      | IIIA1*    | West      | Upland upper slope | 2-5     | Good     | 2             | Herbaceous            | Hay                 |
| 40                             | Lancaster       | Grant            | Wis.  | 42°45' | 90°45' | 1080      | IIIA1*    | West      | Upland upper slope | 5-10    | Good     | 2             | Herbaceous            | Hay                 |
| 41                             | Viroqua         | Vernon           | Wis.  | 43°30' | 91°00' | 1281      | IIIA1*    | West      | Upland upper slope | 3-4     | Good     | 2             | Herbaceous            | Undisturbed         |
| 42                             | Viroqua         | Vernon           | Wis.  | 43°30' | 91°00' | 1281      | IIIA1*    | South     | Upland ridge       | 3-4     | Good     | 2             | Herbaceous            | Undisturbed         |
| 43                             | Viroqua         | Vernon           | Wis.  | 43°30' | 91°00' | 1281      | IIIA1*    | West      | Upland upper slope | 5-8     | Good     | 2             | Herbaceous            | Grazed              |
| 44                             | Black River     | Jackson          | Wis.  | 44°15' | 90°45' | 810       | IIIA1*    | Level     | Upland flat        | 0       | Medium   | 2             | Herbaceous            | Undisturbed         |
| 45                             | Black River     | Jackson          | Wis.  | 44°15' | 90°45' | 810       | IIIA3*    | South     | Terrace flat       | 2-3     | Good     | 2             | Herbaceous            | Undisturbed         |
| 46                             | Black River     | Jackson          | Wis.  | 44°15' | 90°45' | 810       | IIIA1*    | North     | Upland ridge       | 15-20   | Good     | 2             | Herbaceous            | Grazed              |
| 47                             | Black River     | Jackson          | Wis.  | 44°15' | 90°45' | 810       | IIIA3*    | South     | Upland lower slope | 3-5     | Good     | 2             | Herbaceous            | Cultivated          |
| 48                             | Pairchild       | Jackson          | Wis.  | 44°30' | 91°00' | 1080      | IIIA3*    | East      | Upland lower slope | 3-5     | Good     | 2             | Herbaceous            | Grazed              |
| 49                             | Pairchild       | Jackson          | Wis.  | 44°30' | 91°00' | 1080      | IIIA2*    | South     | Upland ridge       | 2-3     | Good     | 3             | Herbaceous            | Cultivated          |
| 50                             | Pairchild       | Jackson          | Wis.  | 44°30' | 91°00' | 1080      | IIIA1*    | South     | Upland ridge       | 2-3     | Good     | 2             | Herbaceous            | Undisturbed         |
| 51                             | Colby           | Marathon         | Wis.  | 45°00' | 90°15' | 1325      | IIIA1*    | East      | Upland upper slope | 5-8     | Good     | 2             | Herbaceous            | Hay                 |
| 52                             | Colby           | Marathon         | Wis.  | 45°00' | 90°15' | 1325      | IIIB2*    | East      | Upland upper slope | 2-3     | Medium   | 2             | Herbaceous            | Undisturbed         |
| 53                             | Price           | Price            | Wis.  | 45°30' | 90°15' | 1635      | IIIB2*    | West      | Bottomland flat    | 2-3     | Good     | 4             | Herbaceous            | Grazed              |
| 54                             | Price           | Price            | Wis.  | 45°30' | 90°15' | 1635      | IIIB2*    | East      | Upland ridge       | 5-6     | Good     | 3             | Herbaceous            | Undisturbed         |
| 55                             | Price           | Price            | Wis.  | 45°30' | 90°15' | 1635      | IIIB2*    | East      | Upland upper slope | 10-14   | Good     | 2             | Herbaceous            | Grazed              |
| 56                             | Marshallfield   | Wood             | Wis.  | 45°30' | 90°15' | 1635      | IIIB2*    | South     | Upland flat        | 0-2     | Medium   | 3             | Herbaceous            | Hay                 |
| 57                             | Marshallfield   | Wood             | Wis.  | 45°30' | 90°15' | 1635      | IIIB2*    | South     | Upland upper slope | 15      | Good     | 2             | Herbaceous            | Undisturbed         |
| 58                             | Caledonia       | Houston          | Minn. | 43°45' | 91°30' | 1178      | IIIA1*    | Southwest | Upland ridge       | 10-12   | Good     | 2             | Herbaceous            | Grazed              |
| 59                             | Caledonia       | Houston          | Minn. | 43°45' | 91°30' | 1178      | IIIA1*    | North     | Upland upper slope | 3-4     | Good     | 3             | Herbaceous            | Undisturbed         |
| 60                             | Caledonia       | Houston          | Minn. | 43°45' | 91°30' | 1178      | IIIA1*    | South     | Upland lower slope | 2-3     | Medium   | 2             | Herbaceous            | Grazed              |
| 61                             | Caledonia       | Payette          | Minn. | 42°45' | 92°00' | 947       | IIIC1*    | North     | Terrace flat       | 2-3     | Medium   | 2             | Herbaceous            | Undisturbed         |
| 62                             | Caledonia       | Payette          | Iowa  | 42°45' | 91°45' | 965       | IIIC2*    | North     | Upland upper slope | 5-6     | Good     | 2             | Herbaceous            | Cultivated          |
| 63                             | Oswein          | Payette          | Iowa  | 42°45' | 91°45' | 965       | IIIC1*    | North     | Terrace flat       | 2-3     | Medium   | 2             | Herbaceous            | Hay                 |
| 64                             | Oswein          | Payette          | Iowa  | 42°45' | 91°45' | 965       | IIIB1*    | Level     | Bottom flat        | 0       | Poor     | 4             | Herbaceous            | Grazed              |
| 65                             | Independence    | Buchanan         | Iowa  | 42°30' | 91°45' | 996       | IIIA2*    | North     | Upland upper slope | 5-6     | Good     | 4             | Herbaceous            | Undisturbed         |
| 66                             | Vinton          | Benton           | Iowa  | 42°15' | 92°00' | 815       | IIIA2*    | South     | Upland ridge       | 3-5     | Good     | 4             | Herbaceous            | Lawn                |
| 67                             | Vinton          | Benton           | Iowa  | 42°15' | 92°00' | 815       | IIIA2*    | North     | Upland lower slope | 5-8     | Good     | 2             | Herbaceous            | Grazed              |
| 68                             | Vinton          | Benton           | Iowa  | 42°15' | 92°00' | 815       | IIIA1*    | East      | Upland ridge       | 8-10    | Good     | 2             | Forest and herbaceous | Undisturbed         |
| 69                             | Vinton          | Benton           | Iowa  | 42°15' | 92°00' | 815       | IIIA1*    | East      | Upland ridge       | 8-10    | Good     | 2             | Forest and herbaceous | Hay                 |
| 70                             | Vinton          | Benton           | Iowa  | 42°15' | 92°00' | 815       | IIIA1*    | South     | Upland ridge       | 10-12   | Good     | 2             | Herbaceous            | Hay                 |
| 71                             | Trear           | Trear            | Iowa  | 42°15' | 92°30' | 947       | IIIA2*    | Level     | Upland upper flat  | 0       | Medium   | 2             | Herbaceous            | Grazed              |
| 72                             | Trear           | Trear            | Iowa  | 42°15' | 92°30' | 947       | IIIA2*    | Level     | Upland upper flat  | 0       | Medium   | 2             | Herbaceous            | Grazed              |
| 73                             | Trear           | Trear            | Iowa  | 42°15' | 92°30' | 947       | IIIB1*    | North     | Bottomland flat    | 3       | Medium   | 2             | Herbaceous            | Undisturbed         |
| 74                             | Trear           | Trear            | Iowa  | 42°15' | 92°30' | 947       | IIIA2*    | East      | Upland lower slope | 8-10    | Good     | 2             | Herbaceous            | Grazed              |
| 75                             | Norton          | Jasper           | Iowa  | 41°45' | 93°00' | 973       | IIIA2*    | Level     | Upland flat        | 0       | Medium   | 2             | Herbaceous            | Undisturbed         |
| 76                             | Norton          | Jasper           | Iowa  | 41°45' | 93°00' | 973       | IIIB2*    | Level     | Bottomland flat    | 0       | Medium   | 2             | Herbaceous            | Undisturbed         |

\* Engineering Conference Land Form questionable.



Table B1 (Continued)

| Site No.                       | Weather Station | County or Parish | State | Lat    | Long.  | El. ft. | Bag Cont. Land Form | Aspect                   | Topography |         |          | Netness Index  | Vegetation  | Land Use |
|--------------------------------|-----------------|------------------|-------|--------|--------|---------|---------------------|--------------------------|------------|---------|----------|--|-------------|----------|
|                                |                 |                  |       |        |        |         |                     |                          | Position   | Slope % | Drainage |  |             |          |
| Lake States Region (Continued) |                 |                  |       |        |        |         |                     |                          |            |         |          |  |             |          |
| 77                             | Indianola       | Warren           | Iowa  | 41°30' | 93°30' | 972     | ID2a* West          | Bottomland terrace slope | 8-10       | Good    | 2        | Herbaceous   | Undisturbed |          |
| 78                             | Indianola       | Warren           | Iowa  | 41°30' | 93°30' | 972     | II1A2* North        | Upland ridge             | 2-3        | Medium  | 2        | Herbaceous   | Hay         |          |
| 79                             | Winteret        | Madison          | Iowa  | 41°15' | 94°00' | 1100    | II1A2* East         | Upland upper flat        | 0-3        | Medium  | 2        | Herbaceous   | Lawn        |          |
| 80                             | Winteret        | Madison          | Iowa  | 41°15' | 94°00' | 1100    | ID2a* West          | Upland upper slope       | 25-30      | Good    | 2        | Herbaceous with some trees                           | Grazed      |          |
| 81                             | Winteret        | Madison          | Iowa  | 41°15' | 94°00' | 1100    | II1A2* Level        | Upland upper flat        | 0          | Medium  | 2        | Herbaceous with some trees                           | Undisturbed |          |
| 82                             | Greenfield      | Adair            | Iowa  | 41°15' | 94°30' | 1300    | II1A2* West         | Upland upper flat        | 2-3        | Good    | 2        | Herbaceous   | Grazed      |          |
| 83                             | Greenfield      | Adair            | Iowa  | 41°15' | 94°30' | 1300    | ID2a* West          | Upland lower slope       | 0-3        | Medium  | 2        | Herbaceous   | Undisturbed |          |
| 84                             | Greenfield      | Adair            | Iowa  | 41°15' | 94°30' | 1300    | II1B1* Level        | Terrace flat             | 0          | Poor    | 2        | Herbaceous   | Undisturbed |          |
| 85                             | Atlantic        | Cass             | Iowa  | 41°30' | 95°00' | 1155    | II1B1* Level        | Bottomland flat          | 0          | Poor    | 2        | Herbaceous   | Undisturbed |          |
| 86                             | Atlantic        | Cass             | Iowa  | 41°30' | 95°00' | 1155    | ID2a* North         | Upland ridge             | 5-6        | Good    | 2        | Herbaceous   | Grazed      |          |
| 87                             | Audubon         | Audubon          | Iowa  | 41°48' | 95°00' | 1300    | II1A2* South        | Upland upper slope       | 10-12      | Good    | 2        | Herbaceous   | Undisturbed |          |
| 88                             | Audubon         | Audubon          | Iowa  | 41°45' | 95°00' | 1300    | II1B1* Level        | Bottom flat              | 0          | Poor    | 2        | Herbaceous   | Grazed      |          |
| 89                             | Audubon         | Audubon          | Iowa  | 41°45' | 95°00' | 1300    | II1A2* Southeast    | Upland upper slope       | 10-12      | Good    | 2        | Herbaceous with some trees                           | Grazed      |          |
| 90                             | Jefferson       | Greene           | Iowa  | 42°00' | 94°15' | 1055    | ID2a* West          | Upland lower slope       | 10         | Good    | 2        | Herbaceous with some trees                           | Grazed      |          |
| 91                             | Jefferson       | Greene           | Iowa  | 42°00' | 94°15' | 1055    | ID1* South          | Upland lower slope       | 10-14      | Good    | 2        | Herbaceous with some trees                           | Grazed      |          |
| 92                             | Jefferson       | Greene           | Iowa  | 42°00' | 94°15' | 1055    | ID2b* South         | Upland depression        | 3-4        | Poor    | 3        | Herbaceous   | Grazed      |          |
| 93                             | Pt. Dodge       | Webster          | Iowa  | 42°30' | 94°15' | 1111    | ID2b* West          | Upland lower slope       | 2-3        | Medium  | 3        | Herbaceous   | Hay         |          |
| 94                             | Pt. Dodge       | Webster          | Iowa  | 42°30' | 94°15' | 1111    | ID2b* Level         | Upland flat              | 0          | Medium  | 3        | Herbaceous with some trees                           | Grazed      |          |
| 95                             | Dakota City     | Humboldt         | Iowa  | 42°45' | 94°15' | 1133    | ID2b* East          | Upland ridge             | 3-5        | Good    | 2        | Herbaceous   | Grazed      |          |
| 96                             | Dakota City     | Humboldt         | Iowa  | 42°45' | 94°15' | 1133    | ID2c* North         | Upland flat              | 2-3        | Medium  | 2        | Herbaceous   | Hay         |          |
| 97                             | Algona          | Ross             | Iowa  | 43°00' | 94°15' | 1200    | ID2c* North         | Upland flat              | 2-3        | Poor    | 2        | Herbaceous   | Hay         |          |
| 98                             | Algona          | Ross             | Iowa  | 43°00' | 94°15' | 1200    | ID2c* Level         | Upland L.-r. slope       | 0          | Medium  | 3        | Herbaceous with some trees                           | Grazed      |          |
| 99                             | Forest City     | Winneshago       | Iowa  | 43°15' | 93°30' | 1229    | II1B1* Level        | Bottom flat              | 0          | Poor    | 2        | Herbaceous   | Undisturbed |          |
| 100                            | Forest City     | Winneshago       | Iowa  | 43°15' | 93°30' | 1229    | ID2b* North         | Upland ridge             | 8-10       | Good    | 2        | Herbaceous forest                                    | Grazed      |          |
| 101                            | Albert Lea      | Freeborn         | Minn. | 43°45' | 93°30' | 1229    | ID2c* West          | Upland upper slope       | 3-4        | Good    | 2        | Herbaceous   | Undisturbed |          |
| 102                            | Albert Lea      | Freeborn         | Minn. | 43°45' | 93°30' | 1229    | ID2c* North         | Upland upper slope       | 3-4        | Good    | 2        | Herbaceous   | Undisturbed |          |
| 103                            | Nasaea          | Nasaea           | Minn. | 44°00' | 93°30' | 1153    | ID2b* West          | Bottom flat              | 2-3        | Poor    | 2        | Herbaceous   | Hay         |          |
| 104                            | Nasaea          | Nasaea           | Minn. | 44°00' | 93°30' | 1153    | ID2b* South         | Bottom flat              | 2-3        | Poor    | 2        | Herbaceous   | Hay         |          |
| 105                            | Nasaea          | Nasaea           | Minn. | 44°45' | 93°00' | 902     | ID2c* Level         | Bottom depression        | 0          | Poor    | 2        | Herbaceous   | Undisturbed |          |
| 106                            | Farmington      | Dakota           | Minn. | 44°45' | 93°00' | 902     | ID2c* South         | Bottom depression        | 0          | Poor    | 2        | Herbaceous   | Undisturbed |          |
| 107                            | Farmington      | Dakota           | Minn. | 44°45' | 93°00' | 902     | ID2c* East          | Upland upper slope       | 10-15      | Good    | 2        | Herbaceous   | Hay         |          |
| 108                            | Baldwin         | St. Croix        | Wis.  | 45°00' | 92°15' | 1140    | ID2b* South         | Upland ridge             | 2-5        | Medium  | 2        | Herbaceous forest                                    | Grazed      |          |
| 109                            | Baldwin         | St. Croix        | Wis.  | 45°00' | 92°15' | 1140    | ID2c* North         | Upland upper slope       | 2          | Good    | 2        | Herbaceous with some trees                           | Undisturbed |          |
| 110                            | Baldwin         | St. Croix        | Wis.  | 45°15' | 92°15' | 1000    | ID2a* West          | Upland ridge             | 6          | Good    | 2        | Herbaceous with some trees                           | Grazed      |          |
| 111                            | Baldwin         | St. Croix        | Wis.  | 45°15' | 92°15' | 1000    | ID2a* North         | Upland upper flat        | 2          | Good    | 2        | Herbaceous   | Undisturbed |          |
| 112                            | Amery           | Polk             | Wis.  | 45°15' | 92°15' | 1000    | ID2a* West          | Upland upper slope       | 3-5        | Good    | 2        | Herbaceous   | Undisturbed |          |
| 113                            | Amery           | Polk             | Wis.  | 45°30' | 91°30' | 1210    | ID2b* West          | Upland upper slope       | 3-5        | Good    | 2        | Aspen and hazel brush cover                          | Undisturbed |          |
| 114                            | Meyerhouser     | Rusk             | Wis.  | 45°30' | 91°30' | 1210    | ID2c* West          | Upland upper slope       | 5-6        | Good    | 2        | Herbaceous   | Undisturbed |          |
| 115                            | Meyerhouser     | Rusk             | Wis.  | 45°30' | 91°30' | 1210    | ID2c* Level         | Upland upper flat        | 0          | Good    | 2        | Herbaceous   | Grazed      |          |
| 116                            | Ladyasith       | Rusk             | Wis.  | 45°30' | 91°00' | 1160    | ID2b* South         | Upland upper flat        | 3-4        | Good    | 2        | Aspen with herbaceous cover                          | Undisturbed |          |
| 117                            | Ladyasith       | Rusk             | Wis.  | 45°45' | 89°45' | 1589    | ID2c* Level         | Upland ridge             | 0          | Poor    | 2        | Jack pine and birch, bracken fern understory         | Undisturbed |          |
| 118                            | Minoqua         | Oneida           | Wis.  | 45°45' | 89°45' | 1589    | ID2c* Level         | Upland ridge             | 0          | Good    | 2        | Maple, aspen, and white pine, herbaceous understory  | Undisturbed |          |
| 119                            | Minoqua         | Oneida           | Wis.  | 45°45' | 89°45' | 1589    | ID2c* Level         | Upland ridge             | 0          | Good    | 2        | Scattered jack pine and alder, herbaceous understory | Undisturbed |          |
| 120                            | Minoqua         | Oneida           | Wis.  | 45°45' | 89°45' | 1589    | ID2c* Level         | Upland ridge             | 0          | Medium  | 2        | Tall hemlock, maple and alder underbrush, herbaceous | Undisturbed |          |
| 121                            | Park Falls      | Price            | Wis.  | 46°00' | 90°30' | 1492    | ID2c* Level         | Bottom flat              | 0          | Medium  | 2        | Herbaceous   | Grazed      |          |
| 122                            | Park Falls      | Price            | Wis.  | 46°00' | 90°30' | 1492    | ID2c* South         | Upland upper slope       | 3-5        | Good    | 2        | Black ash, sugar maple and aspen                     | Undisturbed |          |
| 123                            | Wells           | Ashland          | Wis.  | 46°15' | 90°45' | 1150    | ID2c* South         | Upland lower slope       | 7-10       | Good    | 4        | Herbaceous   | Hay         |          |
| 124                            | Wells           | Ashland          | Wis.  | 46°30' | 90°45' | 650     | ID2c* South         | Upland upper slope       | 3-5        | Good    | 4        | Herbaceous   | Grazed      |          |
| 125                            | Wells           | Ashland          | Wis.  | 46°30' | 90°45' | 650     | ID2c* Level         | Bottom depression        | 0          | Poor    | 2        | Aspen and dense brush understory                     | Undisturbed |          |
| 126                            | Grand Rapids    | Atkinson         | Minn. | 47°00' | 93°30' | 1281    | ID2b* West          | Bottom flat              | 0          | Poor    | 2        | Aspen and dense brush understory                     | Undisturbed |          |
| 127                            | Grand Rapids    | Atkinson         | Minn. | 47°00' | 93°30' | 1281    | ID2b* Level         | Upland upper slope       | 5-7        | Good    | 2        | Hardwood forest                                      | Undisturbed |          |
| 128                            | Remer           | Cass             | Minn. | 47°00' | 94°00' | 1343    | ID2b* East          | Bottomland               | 3-5        | Good    | 4        | Hardwood forest                                      | Undisturbed |          |

\* Engineering Conference Land Form questionable.



Table B1 (Continued)

| Site No.                       | Weather Station | County or Parish | State | Lat.   | Long.   | El. ft. | Soil Conf. Land Form | Topography         |          |         | Wetness Index | Vegetation                                | Land Use                          |
|--------------------------------|-----------------|------------------|-------|--------|---------|---------|----------------------|--------------------|----------|---------|---------------|---|-----------------------------------|
|                                |                 |                  |       |        |         |         |                      | Aspect             | Position | Slope % |               |   |                                   |
| Lake States Region (Continued) |                 |                  |       |        |         |         |                      |                    |          |         |               |   |                                   |
| 99                             | Rever           | Cass             | Minn. | 47°00' | 94°00'  | 1343    | ID2b* West           | Upland upper slope | 10-15    | Good    | 2             | Hardwood forest                           | Undisturbed                       |
| 100                            | Park Rapids     | Hubbard          | Minn. | 47°00' | 95°00'  | 1426    | ID1a* West           | Upland upper slope | 2-3      | Good    | 2             | Herbaceous                                | Grazed                            |
| 101                            | Park Rapids     | Hubbard          | Minn. | 47°00' | 95°00'  | 1426    | ID1a* North          | Upland upper slope | 6-8      | Good    | 2             | Herbaceous                                | Grazed                            |
| 102                            | Park Rapids     | Hubbard          | Minn. | 47°00' | 95°00'  | 1426    | ID1a* West           | Upland upper slope | 5-6      | Good    | 2             | Pine forest                               | Undisturbed                       |
| 103                            | Park Rapids     | Hubbard          | Minn. | 47°00' | 95°00'  | 1426    | ID2a* West           | Upland upper slope | 3-4      | Good    | 2             | Herbaceous                                | Undisturbed                       |
| 104                            | Park Rapids     | Hubbard          | Minn. | 47°00' | 95°00'  | 1426    | ID2a* West           | Upland upper slope | 5-6      | Good    | 2             | Herbaceous                                | Undisturbed                       |
| 105                            | Detroit Lakes   | Becker           | Minn. | 46°45' | 95°45'  | 1375    | IC* West             | Bottomland         | 3-4      | Medium  | 4             | Herbaceous                                | Grazed                            |
| 106                            | Detroit Lakes   | Becker           | Minn. | 46°45' | 95°45'  | 1375    | ID2c* North          | Upland upper slope | 10-12    | Good    | 2             | Hardwood forest, herbaceous understory    | Undisturbed                       |
| 107                            | Fergus Falls    | Ottertail        | Minn. | 46°15' | 96°00'  | 1210    | ID2c* West           | Upland lower slope | 10-12    | Good    | 2             | Herbaceous                                | Hay                               |
| 108                            | Fergus Falls    | Ottertail        | Minn. | 46°15' | 96°00'  | 1210    | ID2c* West           | Upland upper slope | 20-25    | Good    | 2             | Herbaceous                                | Grazed                            |
| 109                            | Campbell        | Wilkin           | Minn. | 46°00' | 96°30'  | 975     | IC* Level            | Bottomland         | 0        | Poor    | 2             | Flax                                      | Cultivated                        |
| 110                            | Campbell        | Wilkin           | Minn. | 46°00' | 96°30'  | 975     | IC* Level            | Bottomland         | 0        | Medium  | 3             | Flax                                      | Cultivated                        |
| 111                            | Campbell        | Wilkin           | Minn. | 46°00' | 96°30'  | 975     | IC* West             | Bottomland         | 0        | Poor    | 3             | Herbaceous                                | Hay                               |
| 112                            | Campbell        | Wilkin           | Minn. | 46°00' | 96°30'  | 975     | IC* West             | Bottomland         | 0        | Poor    | 3             | Herbaceous                                | Hay                               |
| 113                            | Herman          | Grant            | Minn. | 45°45' | 96°15'  | 1078    | IC* North            | Bottomland         | 0        | Poor    | 3             | Flax                                      | Cultivated                        |
| 114                            | Herman          | Grant            | Minn. | 45°45' | 96°15'  | 1078    | IC* Level            | Bottomland         | 0        | Poor    | 3             | Flax                                      | Cultivated                        |
| 115                            | Herman          | Grant            | Minn. | 45°45' | 96°15'  | 1078    | IC* Level            | Bottomland         | 0        | Poor    | 3             | Herbaceous                                | Undisturbed                       |
| 116                            | Morris          | Stevens          | Minn. | 45°30' | 96°00'  | 1170    | IC* West             | Terrace slope      | 10       | Good    | 2             | Herbaceous                                | Grazed                            |
| 117                            | Morris          | Stevens          | Minn. | 45°30' | 96°00'  | 1170    | IC* West             | Upland upper slope | 2-3      | Medium  | 2             | Flax                                      | Cultivated                        |
| 118                            | Morris          | Stevens          | Minn. | 45°30' | 96°00'  | 1170    | IC* East             | Upland upper slope | 2-3      | Medium  | 2             | Flax                                      | Cultivated                        |
| 119                            | Benson          | Swift            | Minn. | 45°15' | 95°30'  | 1040    | IC* Level            | Bottomland         | 0        | Poor    | 2             | Herbaceous                                | Undisturbed                       |
| 120                            | Benson          | Swift            | Minn. | 45°15' | 95°30'  | 1040    | IC* East             | Upland upper flat  | 0-3      | Medium  | 2             | Herbaceous                                | Grazed                            |
| 121                            | New London      | Kandiyohi        | Minn. | 45°15' | 95°00'  | 1215    | ID2c* South          | Upland upper slope | 5-8      | Good    | 2             | Herbaceous                                | Hay                               |
| 122                            | New London      | Kandiyohi        | Minn. | 45°15' | 95°00'  | 1215    | ID2c* East           | Upland lower slope | 10-15    | Good    | 2             | Herbaceous                                | Grazed                            |
| 123                            | St. Cloud       | Stearns          | Minn. | 45°30' | 94°15'  | 1034    | ID2c* Level          | Upland upper flat  | 0        | Medium  | 2             | Herbaceous                                | Undisturbed                       |
| 124                            | St. Cloud       | Benton           | Minn. | 45°30' | 94°15'  | 1034    | ID2c* Level          | Upland upper flat  | 0        | Poor    | 4             | Herbaceous                                | Grazed                            |
| 125                            | Milaca          | Mille Lacs       | Minn. | 45°45' | 93°45'  | 1072    | ID2b* Level          | Terrace flat       | 0        | Poor    | 4             | Herbaceous                                | Undisturbed                       |
| 126                            | Milaca          | Mille Lacs       | Minn. | 45°45' | 93°45'  | 1072    | ID2b* Level          | Upland upper slope | 3-5      | Good    | 3             | Herbaceous                                | Grazed                            |
| 127                            | Milaca          | Mille Lacs       | Minn. | 45°45' | 93°45'  | 1072    | ID2b* Level          | Upland upper slope | 3-5      | Good    | 4             | Herbaceous                                | Grazed                            |
| 128                            | Milaca          | Mille Lacs       | Minn. | 45°45' | 93°45'  | 1072    | ID2b* Level          | Upland upper slope | 3-5      | Good    | 4             | Herbaceous                                | Grazed                            |
| 129                            | Milaca          | Mille Lacs       | Minn. | 45°45' | 93°45'  | 1072    | ID2b* Level          | Upland upper slope | 3-5      | Good    | 4             | Herbaceous                                | Grazed                            |
| 130                            | Milaca          | Mille Lacs       | Minn. | 45°45' | 93°45'  | 1072    | ID2b* Level          | Upland upper slope | 3-5      | Good    | 4             | Herbaceous                                | Grazed                            |
| 131                            | Hinkley         | Pine             | Minn. | 44°45' | 93°15'  | 1001    | ID2c* West           | Upland upper slope | 10-14    | Good    | 2             | Herbaceous                                | Grazed                            |
| 132                            | Hinkley         | Pine             | Minn. | 44°45' | 93°15'  | 1001    | ID2c* West           | Upland upper slope | 10-12    | Good    | 2             | Birch with herbaceous understory          | Undisturbed                       |
| 133                            | Hinkley         | Pine             | Minn. | 46°00' | 93°00'  | 1035    | ID2c* North          | Upland upper slope | 4-6      | Good    | 4             | Herbaceous                                | Grazed                            |
| 134                            | Hinkley         | Pine             | Minn. | 46°00' | 93°00'  | 1035    | ID2c* South          | Upland upper slope | 4-6      | Good    | 4             | Herbaceous                                | Grazed                            |
| 135                            | Hinkley         | Pine             | Minn. | 46°00' | 93°00'  | 1035    | ID2c* Level          | Upland upper flat  | 0        | Good    | 2             | Herbaceous                                | Undisturbed                       |
| 136                            | Hinkley         | Pine             | Minn. | 46°00' | 93°00'  | 1035    | ID2c* Level          | Upland upper flat  | 0        | Good    | 2             | Aspen, oak, paper birch, maple, and alder | Undisturbed                       |
| 137                            | Danbury, Wis.   | Pine             | Minn. | 46°00' | 92°15'  | 900     | ID2c* North          | Upland upper slope | 5-8      | Good    | 2             | Herbaceous                                | Hay                               |
| 138                            | Danbury, Wis.   | Pine             | Minn. | 46°00' | 92°15'  | 900     | ID2c* West           | Upland upper slope | 3-5      | Good    | 2             | Aspen, birch, cherry, and alder           | Undisturbed                       |
| 139                            | Danbury, Wis.   | Pine             | Minn. | 46°00' | 92°15'  | 900     | ID2c* North          | Upland upper slope | 3-5      | Poor    | 2             | Aspen, birch, cherry, and alder           | Undisturbed                       |
| 140                            | Minong          | Waahurn          | Wis.  | 46°00' | 91°45'  | 1080    | ID2c* Southeast      | Upland flat        | 3        | Good    | 2             | Herbaceous                                | Grazed                            |
| 141                            | Minong          | Waahurn          | Wis.  | 46°00' | 91°45'  | 1080    | ID2c* West           | Upland upper slope | 3-5      | Good    | 2             | Herbaceous, brush                         | Undisturbed                       |
| 142                            | Minong          | Waahurn          | Wis.  | 46°00' | 91°45'  | 1080    | ID2b* West           | Upland upper slope | 3-5      | Good    | 2             | Hardwood forest                           | Undisturbed                       |
| Intermountain Region           |                 |                  |       |        |         |         |                      |                    |          |         |               |   |                                   |
| 1                              | Farlington      | Davis            | Utah  | 40°53' | 111°51' | 7100    | IVB2* Southeast      | Upland lower slope | 5        | Good    | 2             | Aspen, herbaceous understory              | Undisturbed (experimental forest) |
| 2                              | Farlington      | Davis            | Utah  | 40°55' | 111°50' | 8400    | IVB2* South          | Upland ridge       | 1-10     | Good    | 2             | Herbaceous                                | Undisturbed (experimental plot)   |
| 3                              | Farlington      | Davis            | Utah  | 40°59' | 111°50' | 6950    | IVC1* North          | Terrace slope      | 3        | Good    | 2             | Herbaceous                                | Undisturbed (experimental forest) |
| 4                              | Farlington      | Davis            | Utah  | 40°57' | 111°49' | 7600    | IVB2* North          | Upland flat        | 1        | Good    | 4             | Herbaceous                                | Undisturbed (experimental plot)   |

(Continued)

\* Engineering Conference Land Form questionable.



Table B1 (Continued)

| Site No.                         | Weather Station   | County or Parish | State | Lat    | Long.   | Elev. ft. | Eng. Conf. Land Form | Aspect | Topography         |         | Drainage       |          | Wetness Index | Vegetation | Land Use    |
|----------------------------------|-------------------|------------------|-------|--------|---------|-----------|----------------------|--------|--------------------|---------|----------------|----------|---------------|------------|-------------|
|                                  |                   |                  |       |        |         |           |                      |        | Position           | Slope % | Surface        | Internal |               |            |             |
| Intermountain Region (Continued) |                   |                  |       |        |         |           |                      |        |                    |         |                |          |               |            |             |
| 5                                | Farmington        | Davis            | Utah  | 40°59' | 111°56' | 4150      | IIIC1* Level         |        | Bottom flat        | 0       | Poor           | Poor     | 4             | Herbaceous | Grazed      |
| 6                                | Farmington        | Davis            | Utah  | 41°00' | 111°56' | 4180      | IIIC2* South         |        | Terrace flat       | 1       | Poor           | Medium   | 3             | Herbaceous | Grazed      |
| 7                                | Farmington        | Davis            | Utah  | 41°01' | 111°57' | 4400      | IIIC1* Southeast     |        | Terrace slope      | 4       | Good           | Good     | 2             | Herbaceous | Grazed      |
| 8                                | Salt Lake Airport | Davis            | Utah  | 40°46' | 112°00' | 4200      | IIIC2* Northwest     |        | Bottom flat        | 0       | Good           | Medium   | 4             | Herbaceous | Undisturbed |
| 9                                | Salt Lake Airport | Davis            | Utah  | 40°46' | 112°00' | 4215      | IIIC2* Level         |        | Terrace flat       | 0       | Poor           | Poor     | 4             | Bare       | Undisturbed |
| 10                               | Salt Lake Airport | Davis            | Utah  | 40°46' | 112°01' | 4250      | IIIC2* Level         |        | Terrace flat       | 0       | Poor           | Poor     | 3             | Herbaceous | Grazed      |
| 11                               | Salt Lake         | Davis            | Utah  | 40°42' | 111°53' | 4200      | IIIC1* Level         |        | Terrace flat       | 0       | Poor           | Poor     | 1             | Herbaceous | Grazed      |
| 12                               | Salt Lake         | Davis            | Utah  | 40°41' | 111°53' | 4210      | IIIC2* West          |        | Terrace flat       | 1       | Medium         | Medium   | 2             | Herbaceous | Undisturbed |
| 13                               | Salt Lake         | Davis            | Utah  | 40°43' | 111°58' | 4210      | IIIC1* Level         |        | Terrace flat       | 0       | Poor to medium | Medium   | 2             | Herbaceous | Grazed      |
| 14                               | Magna             | Salt Lake        | Utah  | 40°43' | 112°01' | 4200      | IIIC2* East          |        | Terrace flat       | 1       | Medium         | Poor     | 3             | Herbaceous | Ball field  |
| 15                               | Magna             | Salt Lake        | Utah  | 40°43' | 112°04' | 4200      | IIIC2* West          |        | Terrace flat       | 1-2     | Medium         | Medium   | 4             | Herbaceous | Grazed      |
| 16                               | Spanish Fork      | Utah             | Utah  | 40°09' | 111°40' | 4600      | IIIC2* Southeast     |        | Terrace flat       | 1       | Good           | Medium   | 2             | Herbaceous | Hay         |
| 17                               | Spanish Fork      | Utah             | Utah  | 40°08' | 111°38' | 4680      | IIIC2* Northwest     |        | Terrace flat       | 1       | Good           | Medium   | 2             | Herbaceous | Undisturbed |
| 18                               | Provo             | Utah             | Utah  | 40°14' | 111°43' | 4480      | IIIC2* West          |        | Terrace flat       | 1       | Medium         | Medium   | 2             | Herbaceous | Hay         |
| 19                               | Provo             | Utah             | Utah  | 40°14' | 111°42' | 4520      | IIIC2* Southeast     |        | Terrace flat       | 1       | Medium         | Poor     | 3             | Herbaceous | Grazed      |
| 20                               | Provo             | Utah             | Utah  | 40°13' | 111°40' | 4500      | IIIC2* South         |        | Terrace flat       | 1       | Medium         | Medium   | 3             | Herbaceous | Grazed      |
| 21                               | Spanish Fork      | Utah             | Utah  | 40°08' | 111°41' | 4600      | IIIC2* West          |        | Bottom flat        | 1       | Medium         | Poor     | 4             | Herbaceous | Grazed      |
| 22                               | Logan             | CACHE            | Utah  | 41°44' | 111°52' | 4600      | IIIC2* West          |        | Bottom flat        | 1       | Medium         | Poor     | 4             | Herbaceous | Grazed      |
| 23                               | Logan             | CACHE            | Utah  | 41°47' | 111°50' | 4600      | IIIC2* West          |        | Bottom flat        | 1       | Medium         | Medium   | 4             | Herbaceous | Grazed      |
| 24                               | Logan             | CACHE            | Utah  | 41°42' | 111°51' | 4600      | IIIC2* Northwest     |        | Bottom flat        | 1       | Medium         | Poor     | 4             | Herbaceous | Hay         |
| 25                               | Conda             | Caribou          | Idaho | 42°44' | 111°33' | 6200      | VIIC2* West          |        | Upland flat        | 0-8     | Medium         | Medium   | 3             | Herbaceous | Grazed      |
| 26                               | Conda             | Caribou          | Idaho | 42°47' | 111°33' | 6200      | VIIC2* East          |        | Upland depression  | 1       | Medium         | Good     | 2             | Herbaceous | Grazed      |
| 27                               | Conda             | Caribou          | Idaho | 42°46' | 111°34' | 6200      | IIIC2* West          |        | Upland flat        | 1       | Good           | Good     | 2             | Herbaceous | Grazed      |
| 28                               | Conda             | Caribou          | Idaho | 42°45' | 111°34' | 6200      | IIIC2* East          |        | Upland flat        | 3       | Medium         | Good     | 2             | Wheat      | Cultivated  |
| 29                               | Bannock           | Caribou          | Idaho | 42°42' | 111°49' | 5460      | IIIC1* South         |        | Upland upper slope | 2       | Good           | Good     | 2             | Herbaceous | Undisturbed |
| 30                               | Bannock           | Caribou          | Idaho | 42°42' | 111°49' | 5450      | IIIC2* East          |        | Upland lower slope | 3       | Good           | Good     | 2             | Wheat      | Cultivated  |
| 31                               | Bannock           | Caribou          | Idaho | 42°44' | 111°56' | 5400      | IIIC1* Northwest     |        | Upland lower slope | 1-4     | Good           | Good     | 2             | Wheat      | Cultivated  |
| 32                               | Pocahontas        | Bannock          | Idaho | 42°48' | 112°23' | 4500      | IIIC1* East          |        | Terrace slope      | 5       | Poor to medium | Good     | 2             | Herbaceous | Grazed      |
| 33                               | Pocahontas        | Bannock          | Idaho | 42°55' | 112°28' | 4440      | IIIC1* Southeast     |        | Terrace flat       | 1       | Poor           | Good     | 1             | Herbaceous | Undisturbed |
| 34                               | Pocahontas        | Bannock          | Idaho | 42°55' | 112°28' | 4440      | IIIC1* Southeast     |        | Terrace flat       | 1       | medium         | Good     | 2             | Herbaceous | Undisturbed |
| 35                               | Pocahontas        | Bannock          | Idaho | 42°55' | 112°26' | 4480      | IIIC1* Southeast     |        | Upland flat        | 1-2     | Good           | Good     | 1             | Herbaceous | Grazed      |
| 36                               | Pocahontas        | Bannock          | Idaho | 42°55' | 112°29' | 4440      | IIIC1* Southeast     |        | Terrace flat       | 1       | Medium         | Good     | 2             | Alfalfa    | Cultivated  |
| 37                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4410      | IIIC1* Southeast     |        | Terrace flat       | 1       | Good           | Good     | 1             | Herbaceous | Grazed      |
| 38                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Good           | Good     | 2             | Alfalfa    | Cultivated  |
| 39                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Medium         | Good     | 2             | Alfalfa    | Cultivated  |
| 40                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Good           | Good     | 2             | Alfalfa    | Cultivated  |
| 41                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Good           | Good     | 4             | Herbaceous | Grazed      |
| 42                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Medium         | Poor     | 2             | Herbaceous | Grazed      |
| 43                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Good           | Good     | 2             | Alfalfa    | Cultivated  |
| 44                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace slope      | 2       | Good           | Good     | 2             | Alfalfa    | Cultivated  |
| 45                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Bottom flat        | 1       | Medium         | Poor     | 3             | Herbaceous | Grazed      |
| 46                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Bottom flat        | 1       | Poor           | Poor     | 4             | Herbaceous | Grazed      |
| 47                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Good           | Good     | 2             | Herbaceous | Grazed      |
| 48                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Medium         | Good     | 2             | Alfalfa    | Cultivated  |
| 49                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Good           | Good     | 2             | Alfalfa    | Cultivated  |
| 50                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC1* Southeast     |        | Terrace flat       | 1       | Medium         | Good     | 2             | Herbaceous | Grazed      |
| 51                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC2* Northwest     |        | Terrace flat       | 1       | Good to medium | Good     | 1             | Herbaceous | Grazed      |
| 52                               | Pocahontas        | Bannock          | Idaho | 42°54' | 112°28' | 4420      | IIIC2* Northwest     |        | Terrace flat       | 1       | Good           | Good     | 1             | Herbaceous | Hay         |

\* Engineering Conference Land Form questionable.



Table B1 (Continued)

| Site No.                         | Weather Station        | County or Parish | State | Lat    | Long.   | El. ft. | Soil Form | Topography |                    |         | Met-Index | Vegetation | Land Use                                 |                     |
|----------------------------------|------------------------|------------------|-------|--------|---------|---------|-----------|------------|--------------------|---------|-----------|------------|--|---------------------|
|                                  |                        |                  |       |        |         |         |           | Aspect     | Position           | Slope % |           |            |  |                     |
|                                  |                        |                  |       |        |         |         |           |            |                    |         |           |            |  | Drainage            |
| Intermountain Region (Continued) |                        |                  |       |        |         |         |           |            |                    |         |           |            |  |                     |
| 52                               | ABC Reactor Center     | Bligham          | Idaho | 43°28' | 112°47' | 4950    | IIH*      | South      | Upland flat        | 1       | Good      | Poor       | Herbaceous                               | Undisturbed         |
| 53                               | ABC Reactor Center     | Bligham          | Idaho | 43°28' | 112°47' | 4950    | IIH*      | North      | Upland flat        | 2       | Good      | Poor       | Herbaceous                               | Undisturbed         |
| 54                               | Arco                   | Butte            | Idaho | 43°41' | 113°20' | 5340    | IIIC*     | West       | Terrace slope      | 3       | Good      | Good       | Herbaceous                               | Grazed              |
| 55                               | Arco                   | Butte            | Idaho | 43°41' | 113°20' | 5315    | IIIC*     | West       | Terrace slope      | 2       | Good      | Good       | Alfalfa                                  | Cultivated          |
| 56                               | Arco                   | Butte            | Idaho | 43°37' | 113°18' | 5320    | IIIC*     | Southeast  | Terrace flat       | 1       | Medium    | Poor       | Herbaceous                               | Hay                 |
| 57                               | Arco                   | Butte            | Idaho | 43°36' | 113°19' | 5350    | IIIC*     | Southeast  | Terrace flat       | 1       | Good      | Good       | Herbaceous                               | Grazed              |
| 58                               | Hayley                 | Blaine           | Idaho | 43°31' | 114°20' | 5250    | IIIC*     | West       | Bottom flat        | 1       | Medium    | Good       | Herbaceous                               | Grazed              |
| 59                               | Hayley                 | Blaine           | Idaho | 43°31' | 114°20' | 5351    | IIIC*     | Southeast  | Upland upper slope | 2       | Good      | Medium     | Herbaceous                               | Grazed              |
| 60                               | Hayley                 | Blaine           | Idaho | 43°33' | 114°15' | 5480    | IIH*      | East       | Bottom flat        | 1       | Medium    | Good       | Herbaceous                               | Undisturbed         |
| 61                               | Gooding                | Gooding          | Idaho | 42°58' | 114°42' | 3550    | IIIC*     | Northwest  | Terrace flat       | 1       | Good      | Good       | Herbaceous                               | Grazed              |
| 62                               | Gooding                | Gooding          | Idaho | 42°57' | 114°38' | 3600    | IIIC*     | West       | Terrace flat       | 1       | Good      | Good       | Herbaceous                               | Grazed              |
| 63                               | Gooding                | Gooding          | Idaho | 42°54' | 114°43' | 3630    | IIIA*     | Northwest  | Upland flat        | 2       | Good      | Good       | Herbaceous                               | Grazed              |
| 64                               | Bliss                  | Gooding          | Idaho | 42°55' | 114°52' | 3660    | IIIA*     | Northwest  | Upland flat        | 1       | Good      | Good       | Herbaceous                               | Grazed              |
| 65                               | Bliss                  | Gooding          | Idaho | 42°57' | 114°58' | 3100    | IIIA*     | South      | Upland depression  | 1       | Good      | Good       | Herbaceous                               | Grazed              |
| 66                               | Bliss                  | Gooding          | Idaho | 42°56' | 114°58' | 3360    | IIIA*     | East       | Upland upper slope | 2       | Good      | Good       | Herbaceous                               | Grazed              |
| 67                               | Mountain Home          | Elmore           | Idaho | 43°04' | 115°39' | 3200    | IIIC*     | Northwest  | Upland flat        | 1       | Good      | Poor       | Herbaceous                               | Undisturbed         |
| 68                               | Mountain Home          | Elmore           | Idaho | 43°08' | 115°43' | 3180    | IIIC*     | East       | Terrace flat       | 1       | Good      | Medium     | Herbaceous                               | Grazed              |
| 69                               | Mountain Home          | Elmore           | Idaho | 43°09' | 115°42' | 3170    | IIIC*     | Southeast  | Terrace flat       | 1       | Good      | Good       | Herbaceous                               | Grazed              |
| 70                               | Idaho City             | Boise            | Idaho | 43°45' | 115°56' | 5000    | IVB*      | Northwest  | Upland ridge       | 10      | Good      | Good       | Ponderosa pine and snowberry, herbaceous | Undisturbed         |
| 71                               | Idaho City             | Boise            | Idaho | 43°42' | 116°00' | 4500    | IVB*      | Southeast  | Upland upper slope | 30      | Good      | Good       | Herbaceous with some trees               | Undisturbed         |
| 72                               | Arrow Rock Dam         | Boise            | Idaho | 43°38' | 115°59' | 3900    | IID*      | West       | Upland lower slope | 12      | Good      | Poor       | Herbaceous                               | Undisturbed         |
| 73                               | Arrow Rock Dam         | Boise            | Idaho | 43°37' | 115°59' | 3800    | IID*      | Northwest  | Upland lower slope | 10      | Good      | Poor       | Herbaceous                               | Undisturbed         |
| 74                               | Boise                  | Ada              | Idaho | 43°34' | 116°07' | 2650    | IIIC*     | Northwest  | Terrace flat       | 1       | Good      | Good       | Herbaceous                               | Grazed              |
| 75                               | Boise                  | Ada              | Idaho | 43°33' | 116°07' | 2650    | IIIC*     | Northwest  | Upland flat        | 1-3     | Good      | Poor       | Herbaceous                               | Grazed              |
| 76                               | Boise                  | Ada              | Idaho | 43°34' | 116°08' | 2835    | IIIC*     | Northwest  | Bottom flat        | 1       | Medium    | Good       | Herbaceous                               | Grazed              |
| 77                               | Cascade                | Valley           | Idaho | 42°41' | 114°33' | 3750    | IIIB*     | Northwest  | Bottom flat        | 1       | Medium    | Good       | Herbaceous                               | Grazed              |
| 78                               | Jerome                 | Jerome           | Idaho | 42°41' | 114°30' | 3560    | IIIB*     | Southeast  | Upland depression  | 1       | Medium    | Good       | Herbaceous                               | Grazed              |
| 79                               | Jerome                 | Jerome           | Idaho | 42°43' | 114°30' | 3560    | IIIB*     | Southeast  | Upland upper slope | 3       | Good      | Good       | Herbaceous                               | Grazed              |
| 80                               | Jerome                 | Jerome           | Idaho | 42°36' | 114°09' | 4060    | IIIA*     | Southwest  | Upland flat        | 1       | Good      | Good       | Oats, barley, and wheat                  | Cultivated          |
| 81                               | Hazelton               | Jerome           | Idaho | 42°35' | 114°09' | 4060    | IIIA*     | East       | Upland lower slope | 1       | Good      | Good       | Herbaceous                               | Cultivated          |
| 82                               | Rupert                 | Jerome           | Idaho | 42°35' | 113°45' | 4200    | IIIA*     | West       | Upland lower slope | 2       | Good      | Good       | Herbaceous                               | Grazed              |
| 83                               | Rupert                 | Minidoka         | Idaho | 42°38' | 113°41' | 4200    | IIIC*     | Southeast  | Terrace flat       | 1       | Medium    | Medium     | Herbaceous                               | Grazed              |
| 84                               | Rupert                 | Minidoka         | Idaho | 42°38' | 113°41' | 4200    | IIIC*     | Southeast  | Terrace flat       | 1       | Medium    | Good       | Herbaceous                               | Cultivated          |
| 85                               | Burley                 | Minidoka         | Idaho | 42°35' | 113°38' | 4100    | IIIC*     | West       | Terrace slope      | 2       | Poor      | Poor       | Herbaceous                               | Undisturbed         |
| 86                               | Burley                 | Cassia           | Idaho | 42°31' | 113°48' | 4100    | IIIC*     | West       | Terrace flat       | 1       | Good      | Good       | Herbaceous                               | Undisturbed         |
| 87                               | Burley                 | Cassia           | Idaho | 42°29' | 113°45' | 4100    | IIIC*     | Northwest  | Terrace flat       | 1       | Good      | Good       | Herbaceous                               | Undisturbed         |
| 88                               | Cascade                | Valley           | Idaho | 44°32' | 115°56' | 5200    | IVB*      | Southeast  | Upland upper slope | 30      | Good      | Good       | Pine forest                              | Undisturbed         |
| 89                               | McCall                 | Valley           | Idaho | 44°32' | 116°00' | 4812    | IVB*      | South      | Terrace slope      | 1-5     | Good      | Good       | Herbaceous with some trees               | Grazed              |
| 90                               | McCall                 | Valley           | Idaho | 44°54' | 116°10' | 5100    | IVB*      | Northwest  | Upland flat        | 1       | Good      | Good       | Herbaceous with some trees               | Grazed              |
| 91                               | McCall                 | Adams            | Idaho | 44°54' | 116°10' | 5025    | IVB*      | Southeast  | Upland lower slope | 15      | Good      | Good       | Herbaceous                               | Grazed              |
| 92                               | Strevell               | Cassia           | Idaho | 42°08' | 113°20' | 5100    | IIIC*     | North      | Terrace flat       | 1       | Medium    | Good       | Herbaceous                               | Grazed              |
| 93                               | Strevell               | Cassia           | Idaho | 42°08' | 113°20' | 5100    | IIIC*     | Southeast  | Terrace flat       | 1       | Good      | Good       | Herbaceous                               | Grazed              |
| 94                               | Ephraim Alpine Meadows | Sanpete          | Utah  | 39°19' | 111°27' | 9860    | IVB*      | Southeast  | Upland lower slope | 2       | Good      | Good       | Herbaceous                               | Experimental forest |
| 95                               | Ephraim GRNC           | Sanpete          | Utah  | 39°18' | 111°27' | 8500    | IVB*      | Northwest  | Upland lower slope | 3       | Good      | Good       | Aspen and snowberry, brush               | Undisturbed         |
| 96                               | Ephraim Oaks           | Sanpete          | Utah  | 39°19' | 111°30' | 7655    | IVB*      | Southeast  | Upland lower slope | 7       | Good      | Good       | Aspen and snowberry, brush understory    | Grazed              |
| 97                               | Ephraim Sorenson Field | Sanpete          | Utah  | 39°21' | 111°35' | 5580    | IIIC*     | Southeast  | Terrace slope      | 3       | Good      | Medium     | Herbaceous                               | Grazed              |
| 98                               | Ephraim Sorenson Field | Sanpete          | Utah  | 39°21' | 111°37' | 5500    | IIIC*     | Southeast  | Bottom flat        | 1       | Poor      | Poor       | Herbaceous                               | Grazed              |

(Continued)

\* Engineering Conference Land Form questionable.



Table B1. (Continued)

| Site No.                         | Weather Station           | County or Parish | State | Lat.   | Long.   | Elev. ft. | Soil Conf. Land Form | Topography |                    |         | Wetness Index  | Vegetation                         | Land Use          |
|----------------------------------|---------------------------|------------------|-------|--------|---------|-----------|----------------------|------------|--------------------|---------|----------------|------------------------------------|-------------------|
|                                  |                           |                  |       |        |         |           |                      | Aspect     | Position           | Slope % |                |                                    |                   |
| Intermountain Region (Continued) |                           |                  |       |        |         |           |                      |            |                    |         |                |                                    |                   |
| 99                               | Ephraim Sorensen Field    | Benpete          | Utah  | 39°23' | 111°35' | 5566      | IIIC*                | Northwest  | Terrace flat       | 1       | Medium to good | Alfalfa                            | Experimental plot |
| 100                              | Richfield                 | Sevier           | Utah  | 38°46' | 112°04' | 5895      | IIIC*                | Southeast  | Bottom flat        | 1       | Medium         | Herbaceous                         | Grazed            |
| 101                              | Richfield                 | Sevier           | Utah  | 38°45' | 112°05' | 5885      | IIIC*                | Southeast  | Bottom flat        | 1       | Medium         | Herbaceous                         | Grazed            |
| 102                              | Richfield                 | Sevier           | Utah  | 38°42' | 112°05' | 5315      | IIIC*                | Southeast  | Terrace slope      | 2-8     | Good           | Herbaceous                         | Grazed            |
| 103                              | Circleville               | Plute            | Utah  | 38°11' | 112°13' | 5550      | IIIC*                | South      | Bottom flat        | 1       | Poor           | Alfalfa                            | Cultivated        |
| 104                              | Circleville               | Plute            | Utah  | 38°10' | 112°15' | 5635      | IIIC*                | Southeast  | Terrace flat       | 1       | Medium         | Herbaceous                         | Grazed            |
| 105                              | Circleville               | Garfield         | Utah  | 38°09' | 112°18' | 5660      | IIIC*                | Northeast  | Terrace flat       | 1       | Poor           | Herbaceous                         | Grazed            |
| 106                              | Zion National Park        | Washington       | Utah  | 37°11' | 113°00' | 3950      | IIIC*                | Southeast  | Terrace slope      | 3-4     | Medium         | Herbaceous                         | Hay               |
| 107                              | Zion National Park        | Washington       | Utah  | 37°10' | 113°00' | 3800      | IIIC*                | Southeast  | Terrace flat       | 1       | Medium         | Herbaceous                         | Grazed            |
| 108                              | La Verkin                 | Washington       | Utah  | 37°12' | 113°16' | 3850      | IIIC*                | Southeast  | Upland lower slope | 2-5     | Good           | Fruit trees, herbaceous understory | Undisturbed       |
| 109                              | La Verkin                 | Washington       | Utah  | 37°12' | 113°16' | 3840      | IIIC*                | West       | Upland lower slope | 2-5     | Good           | Herbaceous                         | Grazed            |
| 110                              | St. George                | Washington       | Utah  | 37°07' | 113°21' | 2700      | IIIC*                | Southeast  | Upland lower slope | 1-3     | Good to medium | Herbaceous                         | Grazed            |
| 111                              | St. George                | Washington       | Utah  | 37°05' | 113°33' | 2800      | IIIC*                | South      | Terrace flat       | 1       | Medium         | Herbaceous w. h. some trees        | Grazed            |
| 112                              | St. George                | Washington       | Utah  | 37°05' | 113°33' | 2835      | IIIC*                | Southeast  | Terrace flat       | 1       | Medium         | Herbaceous                         | Grazed            |
| 113                              | St. George                | Washington       | Utah  | 37°07' | 113°36' | 2880      | IIIC*                | West       | Upland lower slope | 2       | Good           | Herbaceous                         | Grazed            |
| 114                              | St. George                | Washington       | Utah  | 37°07' | 113°36' | 2860      | IIIC*                | South      | Upland lower slope | 3       | Good           | Herbaceous                         | Grazed            |
| 115                              | Enterprise                | Washington       | Utah  | 37°33' | 113°43' | 5400      | IIIC*                | South      | Terrace flat       | 1       | Medium         | Herbaceous                         | Grazed            |
| 116                              | Enterprise                | Washington       | Utah  | 37°33' | 113°42' | 5400      | IIIC*                | Northwest  | Terrace flat       | 1       | Good           | Herbaceous                         | Grazed            |
| 117                              | Enterprise                | Washington       | Utah  | 37°33' | 113°41' | 5420      | IIIC*                | Northwest  | Terrace slope      | 2       | Good           | Herbaceous                         | Undisturbed       |
| 118                              | Enterprise Beryl Junction | Iron             | Utah  | 37°44' | 113°43' | 5400      | IIIC*                | Northeast  | Upland lower slope | 2       | Medium         | Herbaceous                         | Undisturbed       |
| 119                              | Enterprise Beryl Junction | Iron             | Utah  | 37°42' | 113°38' | 5370      | IIIC*                | Northeast  | Upland flat        | 1       | Good           | Herbaceous                         | Grazed            |
| 120                              | Cedar City                | Iron             | Utah  | 37°38' | 112°58' | 5600      | IIIC*                | Northeast  | Upland flat        | 1       | Good           | Herbaceous                         | Grazed            |
| 121                              | Cedar City                | Iron             | Utah  | 37°44' | 112°58' | 5750      | IIIC*                | West       | Upland flat        | 3       | Good           | Herbaceous                         | Grazed            |
| 122                              | Milford                   | Beaver           | Utah  | 38°21' | 112°59' | 4970      | IIIC*                | West       | Terrace flat       | 1       | Poor           | Herbaceous                         | Cultivated        |
| 123                              | Milford                   | Beaver           | Utah  | 38°22' | 113°00' | 4975      | IIIC*                | West       | Terrace flat       | 1       | Good           | Alfalfa                            | Grazed            |
| 124                              | Milford                   | Beaver           | Utah  | 38°22' | 113°00' | 4966      | IIIC*                | Northwest  | Bottom flat        | 1       | Medium         | Herbaceous                         | Grazed            |
| 125                              | Milford                   | Beaver           | Utah  | 38°24' | 113°02' | 5150      | IIIC*                | Northeast  | Upland upper slope | 3       | Good           | Herbaceous                         | Grazed            |
| 126                              | Desert Exp Sta            | Millard          | Utah  | 38°34' | 113°44' | 6000      | IIIC*                | East       | Upland flat        | 1       | Good           | Herbaceous                         | Undisturbed       |
| 127                              | Desert Exp Sta            | Millard          | Utah  | 38°35' | 113°44' | 6000      | IIIC*                | East       | Upland lower slope | 2       | Good           | Herbaceous                         | Bare              |
| 128                              | Desert Exp Sta            | Millard          | Utah  | 38°35' | 113°43' | 5960      | IIIC*                | West       | Upland depression  | 0       | Poor           | Bare                               | Bare              |
| 129                              | Garrison                  | Millard          | Utah  | 38°55' | 114°01' | 5900      | IIIC*                | West       | Terrace flat       | 1       | Good           | Herbaceous                         | Grazed            |
| 130                              | Garrison                  | Millard          | Utah  | 38°55' | 114°02' | 5885      | IIIC*                | Northeast  | Upland lower slope | 2       | Good           | Herbaceous                         | Grazed            |
| 131                              | Garrison                  | Pine             | Nev.  | 38°57' | 114°03' | 6410      | IIIC*                | Northeast  | Upland lower slope | 1       | Good           | Herbaceous                         | Grazed            |
| 132                              | Ely                       | White Pine       | Nev.  | 39°13' | 114°50' | 6305      | IIIC*                | East       | Upland lower slope | 1       | Poor           | Herbaceous                         | Grazed            |
| 133                              | Ely                       | White Pine       | Nev.  | 39°13' | 114°50' | 6305      | IIIC*                | East       | Bottom flat        | 1       | Poor           | Herbaceous                         | Grazed            |
| 134                              | Ely                       | White Pine       | Nev.  | 39°14' | 114°50' | 6300      | IIIC*                | West       | Upland lower slope | 3       | Good           | Herbaceous                         | Grazed            |
| 135                              | Wells                     | Elko             | Nev.  | 41°04' | 114°57' | 5725      | IIIC*                | West       | Upland lower slope | 2       | Good           | Herbaceous                         | Grazed            |
| 136                              | Wells                     | Elko             | Nev.  | 41°05' | 114°57' | 5650      | IIIC*                | Southwest  | Upland lower slope | 1       | Good           | Herbaceous                         | Grazed            |
| 137                              | Wells                     | Elko             | Nev.  | 41°05' | 114°57' | 5635      | IIIC*                | West       | Upland lower slope | 1       | Medium         | Herbaceous                         | Grazed            |
| 138                              | Requop                    | Elko             | Nev.  | 41°04' | 114°33' | 6950      | IIIC*                | North      | Upland lower slope | 5       | Good           | Herbaceous                         | Grazed            |
| 139                              | Requop                    | Elko             | Nev.  | 41°03' | 114°31' | 6800      | IIIC*                | Northwest  | Bottom flat        | 1       | Medium to poor | Herbaceous                         | Grazed            |
| 140                              | Requop                    | Elko             | Nev.  | 41°02' | 114°28' | 6600      | IIIC*                | Northeast  | Upland lower slope | 2       | Good           | Herbaceous                         | Grazed            |
| 141                              | Mendover                  | Tooele           | Utah  | 40°44' | 114°02' | 4240      | IIIC*                | Northeast  | Bottom flat        | 0       | Poor           | Bare                               | Bare              |
| 142                              | Mendover                  | Tooele           | Utah  | 40°44' | 114°00' | 4240      | IIIC*                | Level      | Bottom flat        | 0       | Poor           | Bare                               | Bare              |
| 143                              | Mendover                  | Tooele           | Utah  | 40°44' | 113°20' | 4239      | IIIC*                | Level      | Bottom flat        | 0       | Poor           | Bare                               | Bare              |
| 144                              | Mendover                  | Tooele           | Utah  | 40°44' | 113°19' | 4239      | IIIC*                | Level      | Bottom flat        | 0       | Poor           | Bare                               | Bare              |
| 145                              | Mendover                  | Tooele           | Utah  | 40°44' | 113°15' | 4239      | IIIC*                | Level      | Bottom flat        | 0       | Medium         | Herbaceous                         | Undisturbed       |

\* Engineering Conference Land Form questionable.



Table 22a  
Soil Properties of Strength-moisture Survey Sites  
Southern Region

| Site No. | Soil Series | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |           |           | UPCS<br>Fines<br>< 0.075 mm<br>% | Stone<br>Content<br>by<br>Volume<br>% | Organic<br>Matter<br>by<br>Weight<br>% | Plasticity<br>Constants<br>by Weight, % |            |    | UPCS<br>Class. | Bulk<br>Density<br>g/cc | Soil Moisture by Weight, % |                       |
|----------|-------------|-------------------|----------------|----------------------------------|-----------|-----------|----------------------------------|---------------------------------------|--|---|------------|----|----------------|-------------------------|----------------------------|-----------------------|
|          |             |                   |                | Sand                             | Silt      | Clay      |                                  |                                       |  | LL                                      | PL         | PI |                |                         | Saturation                 | Atmosphere<br>Tension |
| 101      | Dundee      | 0-6<br>6-12       | SIL<br>SIL     | 12<br>11                         | 63<br>64  | 25<br>25  | 99                               | 0                                     | 1.79<br>2.0                            | 38                                      | 22         | 16 | CL             | 1.50<br>1.56            | 31.2<br>27.6               | 27.0<br>26.2          |
| 102      | Commerce    | 0-6<br>6-12       | SIL<br>SIL     | 31<br>21                         | 61<br>65  | 8<br>14   | 93                               | 0                                     | 1.6<br>0.6                             | 29                                      | 25         | 4  | ML             | 1.31<br>1.53            | 36.4<br>30.0               | 30.0<br>26.2          |
| 103      | Commerce    | 0-6<br>6-12       | SIL<br>SIL     | 23<br>20                         | 63<br>67  | 14<br>13  | 93                               | 0                                     | 1.2<br>0.4                             | 32                                      | 23         | 9  | CL             | 1.30<br>1.48            |                            | 29.0<br>27.1          |
| 104      | Dundee      | 0-6<br>6-12       | SIL<br>SICL    | 15<br>13                         | 57<br>56  | 28<br>31  | 97                               | 0                                     | 4.5<br>4.0                             | 52                                      | 23         | 29 | CL             | 1.37<br>1.49            | 35.6<br>30.8               | 28.0<br>29.5          |
| 105      | Madriand    | 0-6<br>6-12       | SIL<br>SIL     | 18<br>25*                        | 59<br>61* | 13<br>14* | 80*                              | 0                                     | 3.3<br>0.7                             | NV                                      | Nonplastic |    | ML             | 1.27<br>1.36            | -----<br>-----             | 32.2<br>27.7          |
| 106      | Sharkey     | 0-6<br>5-12       | SIC<br>C       | 10<br>21                         | 45<br>19  | 45<br>60  | 99                               | 0                                     | 3.6<br>1.5                             | 82                                      | 32         | 50 | CH             | 1.02<br>1.14            | 63.6<br>57.7               | 54.7<br>55.7          |
| 107      | Sharkey     | 0-6<br>6-12       | C<br>C         | 5<br>5                           | 39<br>39  | 56<br>56  | 97                               | 0                                     | 3.0<br>1.3                             | 81                                      | 32         | 49 | CH             | 1.00<br>1.11            | 66.0<br>56.6               | 57.6<br>55.2          |
| 108      | Sharkey     | 0-6<br>6-12       | SICL<br>C      | 12<br>10                         | 50<br>34  | 38<br>56  | 97                               | 0                                     | 3.8<br>1.3                             | 74                                      | 28         | 46 | CH             | 1.21<br>1.22            | 46.6<br>48.5               | 43.1<br>47.2          |
| 109      | Alligator   | 0-6<br>6-12       | SICL<br>C      | 8<br>7                           | 48<br>30  | 44<br>63  | 98                               | 0                                     | 4.2<br>1.2                             | 76                                      | 30         | 46 | CH             | 1.10<br>1.22            | 57.0<br>50.2               | 53.1<br>48.4          |
| 110      | Sharkey     | 0-6<br>6-12       | SIC<br>C       | 15<br>7                          | 42<br>35  | 42<br>58  | 98                               | 0                                     | 2.5<br>0.8                             | 72                                      | 28         | 44 | CH             | 1.36<br>1.24            | 40.1<br>49.1               | 38.3<br>46.5          |
| 111      | Dubbs       | 0-6<br>6-12       | SIL<br>SIL     | 23<br>23                         | 62<br>53  | 15<br>24  | 92                               | 0                                     | 4.8<br>2.2                             | 34                                      | 19         | 15 | CL             | 1.45<br>1.64            | 29.2<br>24.0               | 26.3<br>22.8          |
| 112      | Dubbs       | 0-6<br>6-12       | SIL<br>L       | 27<br>29                         | 55<br>49  | 18<br>22  | 90                               | 0                                     | 3.7<br>1.4                             | 37                                      | 21         | 16 | CL             | 1.51<br>1.51            | 26.5<br>27.9               | 24.9<br>26.4          |
| 113      | Sharkey     | 0-6<br>6-12       | SICL<br>SICL   | 7<br>7                           | 56<br>54  | 37<br>39  | 96                               | 0                                     | 4.0<br>1.9                             | 57                                      | 25         | 32 | CH             | 1.39<br>1.41            | 32.2<br>32.2               | 30.8<br>31.5          |
| 114      | Tunica      | 0-6<br>6-12       | SIC<br>SIC     | 9<br>12                          | 42<br>44  | 49<br>44  | 95                               | 0                                     | 1.6<br>1.0                             | 57                                      | 24         | 33 | CH             | 1.34<br>1.38            | 37.0<br>35.0               | 35.9<br>34.0          |
| 115      | Loring      | 0-6<br>6-12       | SIL<br>SIL     | 11<br>8                          | 78<br>73  | 11<br>17  | 100                              | 0                                     | 2.4<br>0.6                             | 26                                      | 22         | 4  | ML             | 1.32<br>1.41            | 36.5<br>30.9               | 32.6<br>26.4          |
| 116      | Grenada     | 0-6<br>6-12       | SIL<br>SICL    | 8<br>7                           | 68<br>66  | 24<br>27  | 99                               | 0                                     | 9.4<br>0.2                             | 37                                      | 22         | 15 | CL             | 1.56<br>1.54            | 26.8<br>28.1               | 25.5<br>26.8          |
| 117      | Loring      | 0-6<br>6-12       | SIL<br>SIL     | 10<br>8                          | 72<br>70  | 18<br>22  | 99                               | 0                                     | 1.3<br>0.5                             | 36                                      | 23         | 13 | CL             | 1.32<br>1.46            | 36.2<br>30.8               | 32.0<br>29.3          |
| 118      | Lintonia    | 0-6<br>6-12       | SIL<br>SIL     | 12<br>9                          | 77<br>73  | 11<br>18  | 98                               | 0                                     | 2.9<br>1.4                             | 32                                      | 22         | 10 | CL             | 1.46<br>1.56            | 28.9<br>25.6               | 26.5<br>24.1          |
| 119      | Clack       | 0-6<br>6-12       | SL<br>SL       | 53<br>72                         | 39<br>20  | 8<br>8    | 35                               | 0                                     | 1.0<br>0.6                             | 15**                                    | Nonplastic |    | SM             | 1.51<br>1.56            | 25.3<br>22.3               | 19.1<br>14.2          |
| 120      | Forestdale  | 0-6<br>6-12       | SIL<br>L       | 24<br>48                         | 58<br>40  | 18<br>12  | 59                               | 0                                     | 2.2<br>1.6                             | 27                                      | 18         | 9  | CL             | 1.39<br>1.59            | 31.9<br>22.7               | 28.8<br>18.8          |
| 121      | Calhoun     | 0-6<br>6-12       | SL<br>SIL      | 13<br>9                          | 80<br>77  | 7<br>14   | 99                               | 0                                     | 0.8<br>0.5                             | 22**                                    | 21         | 1  | ML             | 1.45<br>1.49            | 29.6<br>26.7               | 26.9<br>24.0          |
| 122      | Waverly     | 0-6<br>6-12       | SIL<br>SIL     | 10<br>7                          | 68<br>75  | 22<br>18  | 99                               | 0                                     | 2.6<br>0.7                             | 28                                      | 22         | 6  | CL-ML          | 1.31<br>1.42            | 34.2<br>29.1               | 31.6<br>27.6          |
| 123      | Waverly     | 0-6<br>6-12       | SIL<br>SIL     | 11<br>12                         | 74<br>69  | 15<br>19  | 94                               | 0                                     | 2.9<br>1.4                             | 34                                      | 23         | 11 | CL             | 1.24<br>1.31            | 40.4<br>35.6               | 35.0<br>32.6          |

(Continued)

\* Adjusted value.

\*\* Modified technique.

NV No value.



Table 22a (Continued)

| Site No. | Soil Series  | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |           | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |                  |         | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|-------------------|----------------|----------------------------------|------------|-----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------------|---------|-------------|-------------------|----------------------------|--------------------|
|          |              |                   |                | Sand                             | Silt       | Clay      |                         |                           |                            | LL                                | PL               | PT      |             |                   | Saturation                 | Atmosphere Tension |
| 124      | Dulac        | 0-6<br>6-12       | SiL<br>CiL     | 28<br>25                         | 62<br>56   | 10<br>19  | 85                      | 0                         | 1.6<br>0.7                 | 26                                | 18               | 8       | CL          | 1.45<br>1.49      | 27.3<br>26.3               | 24.4<br>24.4       |
| 125      | Boesvell     | 0-6<br>6-12       | L<br>C         | 34<br>20                         | 42<br>38   | 24<br>42  | 93                      | 0                         | 2.4<br>0.7                 | 61                                | 30               | 31      | CH          | 1.19<br>1.21      | 42.3<br>47.8               | 37.3<br>46.8       |
| 126      | Lexington    | 0-6<br>6-12       | SiL<br>SiL     | 32<br>25                         | 59<br>59   | 9<br>16   | 83                      | 0                         | 1.3<br>0.4                 | 24                                | 17               | 7       | CL-ML       | 1.51<br>1.60      | 24.8<br>22.3               | 22.5<br>20.8       |
| 127      | Lafe         | 0-6<br>6-12       | SiL<br>SiL     | 31<br>28                         | 65<br>68   | 4<br>4    | 80                      | 0                         | 0.7<br>0.4                 | 17**                              | Nonplastic       |         | ML          | 1.57<br>1.56      | 21.6<br>22.2               | 19.9<br>19.0       |
| 128      | Waverly      | 0-6<br>6-12       | SiL<br>SiL     | 11<br>14                         | 74<br>71   | 15<br>15  | 93                      | 0                         | 2.8<br>0.7                 | 18                                | 18               | 0       | ML          | 1.36<br>1.52      | 30.4<br>22.4               | 28.4<br>20.4       |
| 129      | Lexington    | 0-6<br>6-12       | SiL<br>SiL     | 34<br>23                         | 58<br>57   | 8<br>20   | 88                      | 0                         | 0.6<br>0.3                 | 28                                | 18               | 10      | CL          | 1.52<br>1.58      | 25.4<br>24.6               | 21.7<br>21.7       |
| 130      | Lexington    | 0-6<br>6-12       | SiL<br>SiL     | 25<br>21                         | 65<br>59   | 10<br>20  | 88                      | 0                         | 1.2<br>0.6                 | 27                                | 18               | 9       | CL          | 1.54<br>1.52      | 24.2<br>24.6               | 22.7<br>23.3       |
| 131      | Vian         | 0-6<br>6-12       | SiL<br>SiL     | 37<br>33                         | 54<br>53   | 9<br>14   | 73                      | 0                         | 0.8<br>0.5                 | 19                                | 16               | 3       | ML          | 1.50<br>1.60      | 24.8<br>21.4               | 14.2<br>15.8       |
| 132      | Vian         | 0-6<br>6-12       | SiL<br>SL      | 22<br>71                         | 73<br>20   | 5<br>9    | 33                      | 0                         | 1.6<br>1.2                 | 22                                | 16               | 6       | SC          | 1.54<br>1.63      | 23.5<br>21.1               | 21.2<br>19.0       |
| 133      | Wrightsville | 0-6<br>6-12       | SiL<br>L       | 41<br>43                         | 51<br>48   | 8<br>9    | 62                      | 0                         | 1.3<br>0.7                 | 15                                | 15               | 0       | ML          | 1.61<br>1.68      | 21.1<br>19.3               | 19.1<br>17.8       |
| 134      | Orangeburg   | 0-6<br>6-12       | SL<br>SL       | 60<br>53                         | 32<br>32   | 8<br>15   | 53                      | 0                         | 1.6<br>0.8                 | 18                                | 12               | 6       | CL-ML       | 1.74<br>1.78      | 17.4<br>16.2               | 15.1<br>15.3       |
| 135      | Thompson     | 0-6<br>6-12       | SL<br>SL       | 58<br>65                         | 36<br>27   | 6<br>8    | 39                      | 0                         | 1.2<br>1.0                 | 13**                              | Nonplastic       |         | SM          | 1.59<br>1.68      | 20.9<br>19.7               | 17.3<br>15.8       |
| 136      | Ruston       | 0-6<br>6-12       | SL<br>SL       | 74<br>68                         | 22<br>21   | 4<br>11   | 36                      | 0                         | 0.8<br>0.4                 | 14**                              | Nonplastic       |         | SM          | 1.64<br>1.74      | 18.3<br>16.3               | 13.8<br>13.4       |
| 137      | Ruston       | 0-6<br>6-12       | SL<br>SL       | 68<br>56                         | 25<br>24   | 7<br>20   | 49                      | 0                         | 1.0<br>0.7                 | 24                                | 14               | 10      | SC          | 1.56<br>1.58      | 20.4<br>22.8               | 15.7<br>18.5       |
| 138      | Ochlocknee   | 0-6<br>6-12       | SiL<br>SiL     | 27<br>35                         | 68<br>54   | 5<br>11   | 79                      | 0                         | 2.9<br>1.6                 | 23                                | 18               | 5       | CL-ML       | 1.21<br>1.18      | 45.1<br>43.6               | 36.0<br>34.9       |
| 139      | Bowie        | 0-6<br>6-12       | SL<br>L        | 50<br>39                         | 43<br>43   | 7<br>18   | 69                      | 0                         | 1.9<br>0.8                 | 24                                | 15               | 9       | CL          | 1.46<br>1.51      | 25.8<br>26.2               | 20.7<br>21.0       |
| 140      | Yahola       | 0-6<br>6-12       | SiL<br>SiL     | 26<br>20                         | 63<br>69   | 11<br>11  | 99                      | 0                         | 2.1<br>0.6                 | 23                                | 23               | 0       | ML          | 1.44<br>1.51      | 28.6<br>29.8               | 27.0<br>25.9       |
| 141      | Savannah     | 0-6<br>6-12       | SiL<br>SiL     | 57*<br>33*                       | 55*<br>52* | 8*<br>15* | 75*                     | 0                         | 2.8<br>0.6                 | 26<br>28                          | 23<br>18         | 3<br>10 | CL          | 1.38<br>1.59      | 30.2<br>23.0               | 26.2<br>21.2       |
| 142      | Caddo        | 0-6<br>6-12       | SiL<br>SiL     | 18*<br>12*                       | 73*<br>73* | 9*<br>15* | 90*                     | 0                         | 3.3<br>1.0                 | 34<br>NV                          | 27<br>Nonplastic | 7       | ML          | 1.38<br>1.48      | 32.3<br>29.9               | 29.6<br>26.0       |
| 143      | Olivier      | 0-6<br>6-12       | SiL<br>SiL     | 20<br>16                         | 70<br>69   | 10<br>15  | 90                      | 0                         | 2.5<br>0.6                 | 27                                | 21               | 6       | CL-ML       | 1.35<br>1.54      | 33.2<br>27.6               | 29.4<br>24.2       |
| 144      | Olivier      | 0-6<br>6-12       | SiL<br>SiL     | 31<br>25                         | 60<br>61   | 9<br>14   | 82                      | 0                         | 2.6<br>0.7                 | 26                                | 20               | 6       | CL-ML       | 1.37<br>1.65      | 30.0<br>21.9               | 28.2<br>20.2       |
| 145      | Calhoun      | 0-6<br>6-12       | SiL<br>SiL     | 33<br>18                         | 59<br>71   | 8<br>11   | 88                      | 0                         | 2.2<br>0.7                 | 18                                | 17               | 1       | ML          | 1.40<br>1.54      | 29.8<br>24.2               | 28.1<br>22.3       |
| 146      | Richland     | 0-6<br>6-12       | SiL<br>SiL     | 32<br>30                         | 61<br>58   | 7<br>12   | 81                      | 0                         | 1.6<br>1.0                 | 18                                | 16               | 2       | ML          | 1.32<br>1.60      | 34.4<br>22.6               | 30.1<br>21.0       |
| 147      | Savannah     | 0-6<br>6-12       | L<br>L         | 48<br>39                         | 44<br>42   | 8<br>19   | 73                      | 0                         | 2.9<br>1.3                 | 25                                | 17               | 8       | CL          | 1.48<br>1.56      | 25.4<br>24.4               | 21.8<br>21.0       |

(Continued)

\* Adjusted value.

\*\* Modified technique.

NV No value.



Table B2a (Continued)

| Site No. | Soil Series | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|--------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |             |                    |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PI         | PT |             |                   | Saturation                 | Atmosphere Tension |
| 148      | Susquehanna | 0-6<br>6-12        | L<br>CL        | 52<br>37                         | 40<br>35 | 8<br>28  | 72                      | 0                         | 1.9<br>0.8                 | 34                                | 20         | 14 | CL          | 1.54<br>1.63      | 24.6<br>22.8               | 20.6<br>21.0       |
| 149      | Sawyer      | 0-6<br>6-12        | SL<br>L        | 65<br>50                         | 30<br>42 | 5<br>8   | 61                      | 0                         | 1.0<br>0.6                 | 16**                              | 14         | 2  | ML          | 1.50<br>1.75      | 25.3<br>18.0               | 20.2<br>15.1       |
| 201      | Palaya      | 0-6<br>6-12        | SIL<br>SIL     | 13<br>10                         | 77<br>80 | 10<br>10 | 97                      | 0                         | 1.2<br>0.6                 | 24                                | 24         | 0  | ML          | 1.34<br>1.37      | 33.8<br>33.4               | 31.0<br>29.4       |
| 202      | Loring      | 0-6<br>6-12        | SIL<br>SIL     | 11<br>10                         | 78<br>78 | 11<br>12 | 99                      | 0                         | 1.2<br>0.8                 | 24                                | 22         | 2  | ML          | 1.26<br>1.33      | 37.1<br>37.0               | 30.6<br>31.2       |
| 203      | Loring      | 0-6<br>6-12        | SL<br>SIL      | 10<br>8                          | 81<br>69 | 9<br>23  | 100                     | 0                         | 2.1<br>0.9                 | 32                                | 21         | 11 | CL          | 1.27<br>1.39      | 38.7<br>32.4               | 32.9<br>27.6       |
| 204      | Palaya      | 0-6<br>6-12        | SIL<br>SL      | 20<br>7                          | 72<br>92 | 8<br>11  | 100                     | 0                         | 1.2<br>0.9                 | 25                                | 23         | 2  | ML          | 1.34<br>1.40      | 35.4<br>34.8               | 31.4<br>30.0       |
| 205      | Calhoun     | 0-6<br>6-12        | SIL<br>SL      | 10<br>8                          | 79<br>99 | 11<br>3  | 99                      | 0                         | 3.1<br>1.0                 | 30                                | 26         | 4  | ML          | 1.34<br>1.38      | 33.2<br>36.4               | 29.8<br>30.3       |
| 206      | Olivier     | 0-6<br>6-12        | SIL<br>SIL     | 13<br>11                         | 73<br>69 | 14<br>20 | 96                      | 0                         | 1.6<br>0.1                 | 34                                | 23         | 11 | CL          | 1.46<br>1.46      | 27.4<br>29.9               | 25.2<br>26.9       |
| 207      | Grenada     | 0-6<br>6-12        | SIL<br>SIL     | 13<br>8                          | 77<br>69 | 10<br>23 | 99                      | 0                         | 2.1<br>0.4                 | 34                                | 22         | 12 | CL          | 1.40<br>1.46      | 31.5<br>30.1               | 28.5<br>26.8       |
| 208      | Henry       | 0-6<br>6-12        | SICL<br>SICL   | 7<br>6                           | 65<br>63 | 28<br>31 | 99                      | 0                         | 1.8<br>0.6                 | 34                                | 20         | 14 | CL          | 1.46<br>1.44      | 28.7<br>30.2               | 26.5<br>27.6       |
| 209      | Calloway    | 0-6<br>6-12        | SIL<br>SIL     | 15<br>10                         | 73<br>71 | 12<br>19 | 97                      | 0                         | 1.2<br>0.5                 | 29                                | 22         | 7  | CL-ML       | 1.31<br>1.27      | 36.1<br>41.9               | 32.2<br>34.0       |
| 210      | Oktibbeha   | 0-6<br>6-12        | CL<br>C        | 35<br>24                         | 35<br>30 | 30<br>46 | 80                      | 0                         | 2.1<br>0.7                 | 59                                | 20         | 39 | CH          | 1.48<br>1.49      | 29.0<br>28.0               | 24.4<br>25.7       |
| 211      | Vaiden      | 0-6<br>6-12        | SICL<br>SIC    | 11<br>7                          | 58<br>48 | 31<br>43 | 97                      | 0                         | 2.47<br>1.05               | 53                                | 23         | 30 | CH          | 1.22<br>1.28      | †<br>†                     | 34.8<br>38.9       |
| 212      | Eutaw       | 0-6<br>6-12        | L<br>L         | 38<br>36                         | 48<br>44 | 14<br>20 | 68                      | 0                         | 1.25<br>0.32               | 25                                | 13         | 12 | CL          | 1.64<br>1.74      | 20.4<br>18.4               | 18.4<br>17.4       |
| 213      | Eutaw       | 0-6<br>6-12        | SIL<br>SICL    | 20<br>18                         | 56<br>51 | 24<br>31 | 86                      | 0                         | 2.08<br>0.62               | 40                                | 18         | 22 | CL          | 1.52<br>1.52      | 26.0<br>25.6               | 24.5<br>24.6       |
| 214      | Prentiss    | 0-6<br>6-12        | SIL<br>SIL     | 40<br>25                         | 51<br>50 | 9<br>25  | 83                      | 0                         | 1.05<br>0.32               | 33                                | 20         | 13 | CL          | 1.59<br>1.58      | 22.4<br>24.8               | 19.3<br>22.0       |
| 215      | Martachie   | 0-6<br>6-12        | SL<br>SL       | 70<br>79                         | 20<br>12 | 10<br>9  | 28                      | 0                         | 1.65<br>0.32               | 18**                              | Nonplastic |    | SM          | 1.55<br>1.53      | 22.2<br>24.2               | 19.2<br>19.3       |
| 216      | Tilden      | 0-6<br>6-12        | L<br>L         | 42<br>26                         | 47<br>49 | 11<br>25 | 80                      | 0                         | 0.70<br>0.55               | 53                                | 18         | 35 | CH          | 1.56<br>1.56      | 23.4<br>24.7               | 20.4<br>22.4       |
| 217      | Susquehanna | 0-6<br>6-12        | SIL<br>SICL    | 27<br>20                         | 61<br>53 | 12<br>27 | 88                      | 0                         | 1.65<br>0.55               | 34                                | 20         | 14 | CL          | 1.50<br>1.51      | 25.4<br>28.6               | 22.6<br>25.2       |
| 218      | Shubuta     | 0-6<br>6-12        | LS<br>SL       | 75<br>65                         | 21<br>21 | 4<br>14  | 42                      | 0                         | 0.86<br>0.55               | 22                                | 18         | 4  | SM-SC       | 1.40<br>1.50      | 34.2<br>26.9               | 25.5<br>21.2       |
| 219      | Brooksville | 0-6<br>6-12        | CL<br>SICL     | 21<br>14                         | 51<br>50 | 28<br>36 | 89                      | 0                         | 1.98<br>1.25               | 51                                | 23         | 28 | CH          | 1.50<br>1.57      | 30.2<br>29.8               | 27.4<br>28.2       |
| 220      | Vaiden      | 0-6<br>6-12        | SICL<br>C      | 16<br>17                         | 53<br>39 | 31<br>44 | 92                      | 0                         | 1.25<br>0.62               | 53                                | 21         | 32 | CH          | 1.46<br>1.52      | 33.0<br>32.6               | 31.5<br>30.2       |
| 221      | Hunt        | 0-6<br>6-12        | SIL<br>SICL    | 24<br>18                         | 59<br>47 | 17<br>35 | 86                      | 0                         | 4.0<br>1.9                 | 50                                | 22         | 28 | CH          | 1.57<br>1.55      | 28.0<br>30.4               | 26.4<br>28.4       |
| 222      | Kaufman     | 0-6<br>6-12        | L<br>L         | 35<br>28                         | 47<br>49 | 18<br>23 | 82                      | 0                         | 2.8<br>2.0                 | 29                                | 17         | 12 | CL          | 1.51<br>1.64      | 26.8<br>22.0               | 21.4<br>20.1       |

(Continued)

\*\* Modified technique.

† No data obtained.



Table B2a (Continued)

| Site No. | Soil Series  | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|--------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |              |                    |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PL         | PT |             |                   | Saturation                 | Atmosphere Tension |
| 223      | Leeper       | 0-6<br>6-12        | L<br>CL        | 33<br>26                         | 44<br>39 | 23<br>35 | 82                      | 0                         | 2.4<br>0.9                 | 50                                | 21         | 29 | CL          | 1.38<br>1.57      | 33.9<br>25.8               | 31.8<br>24.9       |
| 224      | Eutaw        | 0-6<br>6-12        | S1L<br>S1CL    | 17<br>15                         | 61<br>55 | 22<br>30 | 90                      | 0                         | 3.9<br>1.0                 | 45                                | 25         | 20 | CL          | 1.07<br>1.40      |                            | 41.2<br>30.4       |
| 225      | Eutaw        | 0-6<br>6-12        | S1L<br>S1CL    | 14<br>10                         | 60<br>55 | 26<br>35 | 94                      | 0                         | 1.4<br>0.5                 | 45                                | 22         | 23 | CL          | 1.41<br>1.47      | 31.6<br>32.4               | 29.1<br>31.0       |
| 226      | Geiger       | 0-6<br>6-12        | S1L<br>S1CL    | 14<br>15                         | 60<br>52 | 26<br>33 | 92                      | 0                         | 1.0<br>0.6                 | 46                                | 26         | 20 | CL          | 1.39<br>1.39      | 33.0<br>35.3               | 31.4<br>34.0       |
| 227      | Falkner      | 0-6<br>6-12        | S1L<br>S1L     | 37<br>32                         | 55<br>55 | 8<br>13  | 75                      | 0                         | 2.6<br>0.6                 | 21                                | 17         | 4  | CL-ML       | 1.53<br>1.63      | 23.6<br>22.0               | 19.8<br>19.3       |
| 228      | Falaya       | 0-6<br>6-12        | S1L<br>L       | 28<br>30                         | 53<br>44 | 19<br>26 | 73                      | 0                         | 3.3<br>0.6                 | 38                                | 21         | 17 | CL          | 1.46<br>1.51      | 32.6<br>27.1               | 25.2<br>24.0       |
| 229      | Eoru         | 0-6<br>6-12        | S1L<br>S1L     | 30<br>20                         | 58<br>57 | 12<br>23 | 86                      | 0                         | 1.4<br>0.9                 | 30                                | 17         | 13 | CL          | 1.50<br>1.58      | 25.6<br>23.2               | 21.6<br>21.6       |
| 230      | Franklinton  | 0-6<br>6-12        | S1L<br>S1L     | 25<br>20                         | 65<br>57 | 10<br>23 | 89                      | 0                         | 2.1<br>0.6                 | 32                                | 20         | 12 | CL          | 1.36<br>1.45      |                            | 26.6<br>26.3       |
| 231      | Shubuta      | 0-6<br>6-12        | SCL<br>C       | 50<br>38                         | 24<br>16 | 26<br>46 | 71                      | 0                         | 1.9<br>1.2                 | 55                                | 28         | 27 | CH          | 1.34<br>1.30      | 33.6<br>45.3               | 29.2<br>41.9       |
| 232      | Collins      | 0-6<br>6-12        | L<br>L         | 38<br>31                         | 50<br>49 | 12<br>20 | 80                      | 0                         | 2.3<br>1.2                 | 30                                | 19         | 11 | CL          | 1.42<br>1.57      |                            | 28.6<br>23.8       |
| 233      | Waverly      | 0-6<br>6-12        | S1L<br>S1L     | 12<br>14                         | 74<br>69 | 14<br>17 | 93                      | 0                         | 1.9<br>1.0                 | 29                                | 21         | 8  | CL          | 1.45<br>1.52      | 30.1<br>27.7               | 27.8<br>25.1       |
| 234      | Lexington    | 0-6<br>6-12        | S1L<br>S1L     | 34<br>10                         | 57<br>75 | 9<br>15  | 97                      | 0                         | 1.9<br>0.6                 | 26                                | 18         | 8  | CL          | 1.33<br>1.45      | 32.8<br>29.3               | 25.3<br>24.3       |
| 235      | Olivier      | 0-6<br>6-12        | S1L<br>S1L     | 24<br>20                         | 63<br>60 | 13<br>20 | 88                      | 0                         | 2.2<br>0.5                 | 29                                | 19         | 10 | CL          | 1.46<br>1.61      | 30.0<br>24.3               | 27.4<br>22.4       |
| 236      | Olliver      | 0-6<br>6-12        | S1L<br>S1L     | 35<br>30                         | 55<br>52 | 10<br>18 | 77                      | 0                         | 0.6<br>0.8                 | 27                                | 19         | 8  | CL          | 1.50<br>1.57      | 27.8<br>25.1               | 25.5<br>23.5       |
| 237      | Lexington    | 0-6<br>6-12        | S1L<br>S1L     | 24<br>18                         | 65<br>60 | 11<br>22 | 87                      | 0                         | 2.0<br>0.9                 | 28                                | 19         | 9  | CL          | 1.34<br>1.50      | 32.5<br>28.2               | 26.0<br>23.8       |
| 238      | Waverly      | 0-6<br>6-12        | S1L<br>S1L     | 15<br>20                         | 70<br>58 | 15<br>22 | 85                      | 0                         | 1.9<br>0.8                 | 34                                | 22         | 12 | CL          | 1.34<br>1.44      | 35.6<br>31.3               | 30.1<br>28.0       |
| 239      | Independence | 0-6<br>6-12        | SL<br>SL       | 67<br>72                         | 22<br>21 | 11<br>7  | 30                      | 0                         | 1.9<br>0.7                 | 14**                              | Nonplastic |    | SM          | 1.49<br>1.63      | 26.8<br>21.5               | 17.6<br>13.2       |
| 240      | Lintonia     | 0-6<br>6-12        | S1L<br>S1L     | 37<br>25                         | 51<br>53 | 12<br>22 | 80                      | 0                         | 1.0<br>0.4                 | 29                                | 17         | 12 | CL          | 1.64<br>1.72      | 21.9<br>19.3               | 18.8<br>17.0       |
| 241      | Carroll      | 0-6<br>6-12        | S1L<br>S1L     | 20<br>10                         | 68<br>68 | 12<br>22 | 96                      | 0                         | 0.9<br>0.2                 | 30                                | 21         | 9  | CL          | 1.51<br>1.60      | 25.7<br>25.4               | 22.6<br>23.4       |
| 242      | Grenada      | 0-6<br>6-12        | S1L<br>S1L     | 10<br>3                          | 79<br>73 | 11<br>24 | 100                     | 0                         | 2.2<br>0.4                 | 33                                | 22         | 11 | CL          | 1.36<br>1.48      | 34.4<br>29.4               | 30.2<br>26.3       |
| 243      | Waverly      | 0-6<br>6-12        | S1L<br>S1L     | 12<br>25                         | 76<br>56 | 12<br>19 | 81                      | 0                         | 1.3<br>0.8                 | 28                                | 23         | 5  | ML          | 1.44<br>1.49      | 31.0<br>30.2               | 28.0<br>26.4       |
| 244      | Memphis      | 0-6<br>6-12        | S1L<br>S1L     | 12<br>8                          | 76<br>67 | 12<br>25 | 99                      | 0                         | 1.4<br>0.6                 | 34                                | 21         | 13 | CL          | 1.38<br>1.37      | 32.1<br>35.0               | 27.6<br>28.1       |
| 245      | Waverly      | 0-6<br>6-12        | S1L<br>S1L     | 7<br>6                           | 79<br>81 | 14<br>13 | 100                     | 0                         | 1.6<br>0.6                 | 29                                | 25         | 4  | ML          | 1.27<br>1.47      | 39.9<br>30.2               | 35.6<br>27.8       |
| 246      | Callovey     | 0-6<br>6-12        | S1L<br>S1L     | 9<br>10                          | 80<br>71 | 11<br>19 | 97                      | 0                         | 0.9<br>0.6                 | 34                                | 24         | 10 | ML          | 1.50<br>1.41      |                            | 25.4<br>29.4       |

(Continued)

\*\* Modified technique.



Table B2a (Continued)

| Site No. | Soil Series | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |            | USCS Fines < 0.075 mm % | Store Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                   |
|----------|-------------|-------------------|----------------|----------------------------------|------------|------------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|-------------------|
|          |             |                   |                | Sand                             | Silt       | Clay       |                         |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Air where Tension |
| 247      | Grenada     | 0-6<br>6-12       | SIL<br>SIL     | 13<br>8                          | 76<br>67   | 11<br>25   | 38                      | 0                         | 1.8<br>0.5                 | 34                                | 23         | 11 | CL          | 1.48<br>1.48      | 29.2<br>25.0               | 27.0<br>27.1      |
| 248      | Calloway    | 0-6<br>6-12       | SIL<br>SIL     | 16<br>8                          | 70<br>68   | 14<br>24   | 9%                      | 0                         | 1.2<br>0.5                 | 35                                | 24         | 11 | ML          | 1.47<br>1.46      | 29.1<br>30.0               | 25.9<br>28.0      |
| 249      | Grenada     | 0-6<br>6-12       | SIL<br>SIL     | 11<br>7                          | 73<br>70   | 16<br>23   | 99                      | 0                         | 3.4<br>0.7                 | 34                                | 23         | 11 | CL          | 1.48<br>1.48      | 29.1<br>29.4               | 26.9<br>27.7      |
| 250      | Loring      | 0-6<br>6-12       | SIL<br>SICL    | 9*<br>6*                         | 76*<br>65* | 15*<br>29* | 47*                     | 0                         | 1.5<br>0.5                 | NV                                | Nonplastic |    | ML          | 1.36<br>1.39      | 32.2<br>31.0               | 28.0<br>27.3      |
| 251      | Collins     | 0-6<br>6-12       | S1<br>S1       | 10<br>10                         | 81<br>81   | 9<br>9     | 95                      | 0                         | 1.2<br>1.8                 | NV                                | Nonplastic |    | ML          | 1.29<br>1.34      | 38.8<br>38.3               | 32.7<br>30.7      |
| 252      | Carroll     | 0-6<br>6-12       | SIL<br>SIL     | 15<br>10                         | 78<br>75   | 7<br>15    | 96                      | 0                         | 1.6<br>0.6                 | 34                                | 19         | 15 | CL          | 1.34<br>1.38      | -----<br>-----             | 28.5<br>27.4      |
| 253      | Collins     | 0-6<br>6-12       | SIL<br>SIL     | 10<br>10                         | 79<br>77   | 11<br>13   | 99                      | 0                         | 1.6<br>0.5                 | 29                                | 4          | 5  | ML          | 1.48<br>1.51      | 29.2<br>28.4               | 26.4<br>25.7      |
| 254      | Memphis     | 0-6<br>6-12       | SIL<br>SICL    | 10<br>5                          | 67<br>64   | 23<br>31   | 100                     | 0                         | 1.3<br>0.4                 | 42                                | 24         | 18 | CL          | 1.52<br>1.46      | 27.4<br>32.6               | 23.9<br>28.1      |
| 255      | Olivier     | 0-6<br>6-12       | SIL<br>SIL     | 15<br>13                         | 74<br>67   | 11<br>20   | 92                      | 0                         | 1.3<br>0.6                 | 34                                | 23         | 11 | CL          | 1.43<br>1.44      | -----<br>-----             | 27.2<br>27.4      |
| 256      | Hymon       | 0-6<br>6-12       | SIL<br>SIL     | 11<br>15                         | 73<br>72   | 10<br>13   | 95                      | 0                         | 1.4<br>0.6                 | 22                                | 20         | 2  | ML          | 1.46<br>1.48      | 29.0<br>30.9               | 24.8<br>26.0      |
| 257      | Dundee      | 0-6<br>6-12       | SIL<br>SICL    | 18<br>13                         | 60<br>55   | 22<br>32   | 98                      | 0                         | 2.5<br>1.4                 | 46                                | 24         | 22 | CL          | 1.39<br>1.50      | 32.8<br>30.0               | 27.3<br>28.2      |
| 258      | Dundee      | 0-6<br>6-12       | SIL<br>SICL    | 23<br>11                         | 54<br>54   | 23<br>35   | 96                      | 0                         | 1.4<br>0.6                 | 43                                | 25         | 18 | CL          | 1.47<br>1.47      | 28.1<br>32.4               | 25.3<br>29.3      |
| 259      | Dowling     | 0-6<br>6-12       | C<br>C         | 20*<br>20*                       | 25*<br>25* | 55*<br>55* | 85*                     | 0                         | 6.1<br>5.1                 | 91                                | 42         | 49 | ME          | 0.86<br>0.95      | 79.7<br>71.5               | 62.4<br>68.6      |
| 260      | Sharkey     | 0-6<br>6-12       | SIC<br>C       | 7<br>9                           | 48<br>38   | 45<br>53   | 99                      | 0                         | 1.2<br>1.2                 | 82                                | 28         | 54 | CH          | 1.36<br>1.34      | 36.5<br>43.0               | 34.8<br>40.1      |
| 261      | Dundee      | 0-6<br>6-12       | SIL<br>CL      | 26<br>20                         | 58<br>51   | 16<br>29   | 97                      | 0                         | 3.3<br>0.9                 | 42                                | 22         | 20 | CL          | 1.54<br>1.53      | 26.0<br>30.4               | 24.2<br>28.6      |
| 301      | Cuthbert    | 0-6<br>6-12       | SL<br>SCL      | 69<br>50                         | 23<br>26   | 8<br>24    | 62                      | 0                         | 1.0<br>0.6                 | 26                                | 15         | 11 | CL          | 1.55<br>1.61      | 26.0<br>20.9               | 16.2<br>16.5      |
| 302      | Rains       | 0-6<br>6-12       | SL<br>SL       | 61<br>60                         | 32<br>32   | 7<br>8     | 54                      | 0                         | 2.6<br>0.8                 | 17**                              | Nonplastic |    | ML          | 1.43<br>1.58      | 25.9<br>22.2               | 20.1<br>19.6      |
| 303      | Lynchburg   | 0-6<br>6-12       | SL<br>SL       | 62<br>64                         | 31<br>25   | 7<br>11    | 53                      | 0                         | 4.5<br>1.0                 | 18**                              | Nonplastic |    | ML          | 1.34<br>1.71      | 31.1<br>19.9               | 26.7<br>16.7      |
| 304      | Iuka        | 0-6<br>6-12       | SIL<br>SICL    | 13<br>11                         | 61<br>57   | 26<br>32   | 96                      | 0                         | 2.8<br>1.2                 | 44                                | 23         | 21 | CL          | 1.40<br>1.48      | 30.5<br>29.5               | 26.9<br>27.7      |
| 305      | Kershaw     | 0-6<br>6-12       | S<br>S         | 93<br>93                         | 4<br>4     | 3<br>3     | 10                      | 0                         | 1.0<br>0.8                 | NV                                | Nonplastic |    | SM          | 1.36<br>1.53      | 32.1<br>24.1               | 11.6<br>8.2       |
| 306      | Greenville  | 0-6<br>6-12       | L<br>CL        | 52<br>40                         | 28<br>27   | 20<br>33   | 64                      | 0                         | 1.0<br>0.7                 | 33                                | 13         | 20 | CL          | 1.57<br>1.56      | 24.2<br>23.4               | 17.4<br>20.1      |
| 307      | Magnolia    | 0-6<br>6-12       | LS<br>SL       | 78<br>70                         | 16<br>16   | 6<br>14    | 45                      | 0                         | 1.2<br>1.0                 | 17**                              | Nonplastic |    | SM          | 1.39<br>1.52      | 25.4<br>24.4               | 15.8<br>16.9      |
| 308      | Sawyer      | 0-6<br>6-12       | LS<br>LS       | 81<br>81                         | 16<br>14   | 3<br>5     | 24                      | 0                         | 1.9<br>0.7                 | 15**                              | Nonplastic |    | SM          | 1.36<br>1.51      | 31.5<br>27.1               | 17.8<br>15.6      |
| 309      | Orangeburg  | 0-6<br>6-12       | LS<br>SL       | 81<br>78                         | 13<br>13   | 6<br>9     | 27                      | 0                         | 2.4<br>1.0                 | 12**                              | Nonplastic |    | SM          | 1.57<br>1.73      | 24.6<br>20.7               | 11.9<br>12.2      |

(Continued)

\* Adjusted value.

\*\* Modified technique.

NV No value.



Table B2a (Continued)

| Site No. | Soil Series           | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |            | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |    |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-----------------------|-------------------|----------------|----------------------------------|------------|------------|-------------------------|---------------------------|----------------------------|-----------------------------------|----|----|-------------|-------------------|----------------------------|--------------------|
|          |                       |                   |                | Sand                             | Silt       | Clay       |                         |                           |                            | IL                                | PI | FI |             |                   | Saturation                 | Atmosphere Tension |
| 310      | Cahaba                | 0-6<br>6-12       | LS<br>SL       | 81<br>74                         | 15<br>17   | 4<br>9     | 33                      | 0                         | 1.0<br>0.6                 | 17**                              |    |    | SM          | 1.41<br>1.53      | 30.9<br>23.2               | 18.4<br>16.0       |
| 311      | Ora                   | 0-6<br>6-12       | SL<br>SCL      | 58<br>50                         | 24<br>27   | 8<br>23    | 55                      | 0                         | 1.25<br>0.70               | 24                                | 12 | 12 | CL          | 1.65<br>1.57      | 20.6<br>22.5               | 13.1<br>15.8       |
| 312      | Red Bay               | 0-6<br>6-12       | SL<br>SL       | 72<br>58                         | 13<br>12   | 15<br>20   | 38                      | 0                         | 0.78<br>0.46               | 21                                | 11 | 10 | SC          | 1.50<br>1.36      | 26.4<br>31.6               | 17.2<br>19.1       |
| 313      | Norfolk               | 0-6<br>6-12       | LS<br>LS       | 80<br>79                         | 15<br>15   | 5<br>6     | 27                      | 0                         | 1.45<br>0.46               | 13**                              |    |    | SM          | 1.49<br>1.71      | 28.5<br>19.7               | 18.6<br>12.9       |
| 314      | Bibb                  | 0-6<br>6-12       | SL<br>SL       | 54*<br>72*                       | 35*<br>20* | 11*<br>8*  | 35*                     | 0                         | 4.57<br>1.35               | NV                                |    |    | SM          | 1.26<br>1.53      | 37.9<br>23.1               | 30.7<br>18.1       |
| 315      | Orangeburg,<br>Custis | 0-6<br>6-12       | S<br>LS        | 88<br>88                         | 8<br>5     | 4<br>7     | 20                      | 0                         | 0.86<br>0.46               | 14**                              |    |    | SM          | 1.48<br>1.62      | 28.5<br>21.1               | 11.6<br>9.3        |
| 316      | Norfolk               | 0-6<br>6-12       | SL<br>SL       | 74<br>73                         | 18<br>14   | 8<br>13    | 31                      | 0                         | 2.08<br>0.70               | 13**                              |    |    | SM          | 1.68<br>1.84      | 20.5<br>15.6               | 15.6<br>13.8       |
| 317      | Norfolk               | 0-6<br>6-12       | LS<br>LS       | 83<br>83                         | 12<br>9    | 5<br>8     | 24                      | 0                         | 1.15<br>0.46               | 13**                              |    |    | SM          | 1.60<br>1.70      | 20.3<br>17.6               | 12.0<br>10.9       |
| 318      | Ruston                | 0-6<br>6-12       | SL<br>SL       | 75<br>76                         | 17<br>12   | 8<br>12    | 28                      | 0                         | 2.08<br>0.70               | 14**                              |    |    | SM          | 1.46<br>1.71      | 25.5<br>17.5               | 15.0<br>12.4       |
| 319      | Unclassified          | 0-6<br>6-12       | SIC<br>C       | 11*<br>14*                       | 47*<br>38* | 42*<br>48* | 90*                     | 0                         | 7.45<br>11.33              | 61                                | 38 | 23 | OH          | 1.00<br>1.00      | 58.3<br>56.6               | 48.2<br>52.8       |
| 320      | Norfolk               | 0-6<br>6-12       | SL<br>SL       | 76<br>73                         | 14<br>10   | 10<br>17   | 32                      | 0                         | 2.08<br>0.78               | 15**                              |    |    | SM          | 1.58<br>1.74      | 22.8<br>18.4               | 14.6<br>14.5       |
| 321      | Faceville             | 0-6<br>6-12       | LS<br>SCL      | 81<br>70                         | 10<br>9    | 9<br>21    | 37                      | 0                         | 0.95<br>0.78               | 19**                              |    |    | SM          | 1.54<br>1.51      | 23.7<br>24.8               | 17.6<br>20.2       |
| 322      | Grady                 | 0-6<br>6-12       | SL<br>SL       | 71<br>75                         | 14<br>8    | 15<br>17   | 17                      | 0                         | 4.34<br>0.95               | 17**                              | 16 | 1  | SM          | 1.26<br>1.71      | 28.8<br>17.4               | 20.5<br>14.9       |
| 323      | Klej                  | 0-6<br>6-12       | LS<br>LS       | 84<br>84                         | 7<br>9     | 9<br>7     | 23                      | 0                         | 2.60<br>1.05               | 14**                              |    |    | SM          | 1.33<br>1.44      | 33.6<br>19.8               | 20.2<br>13.8       |
| 324      | Congaree              | 0-6<br>6-12       | CL<br>CL       | 34<br>34                         | 37<br>27   | 29<br>39   | 74                      | 0                         | 2.75<br>1.25               | 38                                | 19 | 19 | CL          | 1.29<br>1.54      | 35.6<br>24.8               | 32.2<br>23.9       |
| 325      | Vancluse              | 0-6<br>6-12       | S<br>LS        | 90<br>88                         | 6<br>5     | 4<br>7     | 23                      | 0                         | 0.62<br>0.32               | 13**                              |    |    | SM          | 1.56<br>1.71      | 21.6<br>18.4               | 12.5<br>14.1       |
| 326      | Barth                 | 0-6<br>6-12       | LS<br>S        | 85<br>88                         | 10<br>8    | 5<br>4     | 27                      | 0                         | 1.45<br>0.46               | 15**                              |    |    | SM          | 1.57<br>1.57      | 21.8<br>20.8               | 18.0<br>15.6       |
| 327      | Red Bay               | 0-6<br>6-12       | LS<br>SL       | 83<br>80                         | 12<br>9    | 5<br>11    | 25                      | 0                         | 1.98<br>0.52               | 14                                |    |    | SM          | 1.50<br>1.60      | 26.3<br>20.5               | 16.8<br>15.7       |
| 328      | Faceville             | 0-6<br>6-12       | SL<br>SCL      | 75<br>62                         | 7<br>5     | 18<br>33   | 41                      | 0                         | 1.25<br>0.70               | 31**                              |    |    | SM          | 1.50<br>1.45      | 24.8<br>29.5               | 21.1<br>27.5       |
| 329      | Ochlockonee           | 0-6<br>6-12       | SL<br>SCL      | 71<br>69                         | 16<br>11   | 13<br>20   | 37                      | 0                         | 2.75<br>1.05               | 21**                              |    |    | SM          | 1.50<br>1.45      | 24.9<br>27.4               | 20.4<br>21.0       |
| 330      | Plummer               | 0-6<br>6-12       | LS<br>LS       | 85<br>88                         | 11<br>6    | 4<br>6     | 18                      | 0                         | 4.34<br>1.98               | 14**                              |    |    | SM          | 1.58<br>1.60      | 31.7<br>21.4               | 20.0<br>14.2       |
| 331      | Lakeland              | 0-6<br>6-12       | S<br>S         | 88<br>90                         | 8<br>5     | 4<br>5     | 16                      | 0                         | 1.55<br>0.70               | 14**                              |    |    | SM          | 1.52<br>1.61      | 27.2<br>22.3               | 20.1<br>13.2       |
| 332      | Leon                  | 0-6<br>6-12       | S<br>S         | 91<br>90                         | 6<br>5     | 3<br>4     | 19                      | 0                         | 2.60<br>1.45               | 15**                              |    |    | SM          | 1.38<br>1.52      | 32.5<br>23.4               | 19.5<br>13.2       |
| 333      | Lakeland              | 0-6<br>6-12       | S<br>S         | 91<br>91                         | 5<br>4     | 4<br>5     | 14                      | 0                         | 1.05<br>0.55               | 14**                              |    |    | SM          | 1.48<br>1.50      | 26.7<br>23.7               | 10.4<br>10.0       |

(Continued)

\* Adjusted value

\*\* Modified technique.

NV No value.



Table B2a (Continued)

| Site No. | Soil Series  | Depth Sampled in | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class.  | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|--------------|-------------------|----------------------------|--------------------|
|          |              |                  |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PL         | PI |              |                   | Saturation                 | Atmosphere Tension |
|          |              |                  |                |                                  |          |          |                         |                           |                            |                                   |            |    |              |                   |                            |                    |
| 1        | Kennesaw     | 0-6<br>6-12      | LS<br>LS       | 85<br>88                         | 11<br>5  | 4<br>7   | 18                      | 0                         | 2.60<br>1.87               | 19**                              | Nonplastic | SM | 1.33<br>1.36 | 32.5<br>30.0      | 18.8<br>20.7               |                    |
| 117      | Douglasboro  | 0-6<br>6-12      | LS<br>S        | 90<br>89                         | 10<br>3  | 4<br>3   | 13                      | 0                         | 1.15<br>0.78               | 14**                              | Nonplastic | SM | 1.48<br>1.62 | 24.5<br>19.9      | 13.8<br>13.3               |                    |
| 118      | Palma        | 0-6<br>6-12      | SL<br>S        | 88<br>92                         | 26<br>5  | 6<br>2   | 33                      | 0                         | 4.05<br>0.25               | 16**                              | Nonplastic | SM | 1.25<br>1.51 | 32.6<br>23.3      | 22.4<br>12.7               |                    |
| 337      | Lynchburg    | 0-6<br>6-12      | LS<br>LS       | 85<br>86                         | 11<br>8  | 4<br>5   | 23                      | 0                         | 2.08<br>0.70               | 13**                              | Nonplastic | SM | 1.59<br>1.63 | 19.9<br>19.6      | 13.5<br>12.2               |                    |
| 338      | Lynchburg    | 0-6<br>6-12      | LS<br>LS       | 86<br>87                         | 9<br>7   | 5<br>6   | 22                      | 0                         | 1.45<br>0.62               | 12**                              | Nonplastic | SM | 1.55<br>1.67 | 21.7<br>18.9      | 13.3<br>12.4               |                    |
| 339      | Itasca       | 0-6<br>6-12      | SL<br>SL       | 73<br>72                         | 17<br>11 | 10<br>17 | 33                      | 0                         | 1.05<br>0.38               | 17                                | 11         | 6  | SM-SC        | 1.74<br>1.83      | 15.1<br>14.4               | 11.5<br>11.0       |
| 340      | Irvington    | 0-6<br>6-12      | LS<br>SL       | 84<br>80                         | 9<br>8   | 7<br>12  | 28                      | 0                         | 1.50<br>0.75               | 22                                | 13         | 9  | SC           | 1.66<br>1.80      | 21.2<br>18.4               | 10.9<br>12.6       |
| 341      | Tifton       | 0-6<br>6-12      | LS<br>SL       | 88<br>76                         | 5<br>6   | 6<br>18  | 31                      | 0                         | 1.05<br>0.55               | 15                                | 12         | 3  | SM           | 1.63<br>1.72      | 22.2<br>17.9               | 9.0<br>10.4        |
| 342      | Grady        | 0-6<br>6-12      | L<br>SCL       | 51<br>58                         | 32<br>22 | 17<br>20 | 47                      | 0                         | 5.04<br>1.25               | 17                                | 10         | 7  | SC-SM        | 1.22<br>1.80      | 44.6<br>16.3               | 32.2<br>13.7       |
| 343      | Unclassified | 0-6<br>6-12      | SL<br>SL       | 74<br>73                         | 17<br>12 | 9<br>15  | 33                      | 0                         | 1.88<br>0.70               | 14**                              | Nonplastic | SM | 1.60<br>1.78 | 21.7<br>16.9      | 15.7<br>13.7               |                    |
| 344      | Greenville   | 0-6<br>6-12      | SL<br>SCL      | 80<br>61                         | 9<br>11  | 11<br>28 | 43                      | 0                         | 1.15<br>0.70               | 21                                | 12         | 9  | SC           | 1.56<br>1.72      | 23.0<br>19.1               | 14.4<br>16.2       |
| 345      | Magolia      | 0-6<br>6-12      | LS<br>SCL      | 86<br>68                         | 10<br>1  | 4<br>21  | 39                      | 0                         | 0.38<br>0.38               | 20                                | 11         | 9  | SC           | 1.48<br>1.72      | 27.2<br>18.2               | 13.1<br>14.8       |
| 346      | Henderson    | 0-6<br>6-12      | SL<br>SL       | 58<br>57                         | 32<br>23 | 10<br>20 | 48                      | 0                         | 3.41<br>1.33               | 18**                              | 10         | 8  | SC           | 1.57<br>1.64      | 23.6<br>21.0               | 18.7<br>17.8       |
| 347      | Byars        | 0-6<br>6-12      | L<br>SCL       | 44<br>50                         | 36<br>24 | 20<br>26 | 58                      | 0                         | 4.52<br>2.87               | 31                                | 19         | 12 | CL           | 1.31<br>1.59      | 36.6<br>23.2               | 33.1<br>21.5       |
| 348      | Lakeland     | 0-6<br>6-12      | LS<br>LS       | 84<br>84                         | 13<br>10 | 3<br>6   | 25                      | 0                         | 0.78<br>0.70               | 15**                              | Nonplastic | SM | 1.41<br>1.44 | 31.0<br>29.3      | 25.1<br>22.9               |                    |
| 349      | Ruston       | 0-6<br>6-12      | LS<br>LS       | 81<br>80                         | 12<br>12 | 7<br>8   | 24                      | 0                         | 1.98<br>0.86               | 18**                              | Nonplastic | SM | 1.42<br>1.56 | 30.5<br>23.6      | 27.3<br>13.0               |                    |
| 350      | Outhbert     | 0-6<br>6-12      | LS<br>SC       | 82<br>46                         | 9<br>9   | 9<br>45  | 56                      | 0                         | 1.33<br>0.86               | 49                                | 23         | 26 | CL           | 1.45<br>1.27      | 29.4<br>41.7               | 18.7<br>39.8       |
| 351      | Mantachie    | 0-6<br>6-12      | SL<br>SL       | 73<br>69                         | 19<br>19 | 8<br>12  | 38                      | 0                         | 1.25<br>0.86               | 18**                              | Nonplastic | SM | 1.47<br>1.45 | 26.8<br>28.6      | 21.6<br>23.1               |                    |
| 352      | Susquehanna  | 0-6<br>6-12      | SCL<br>C       | 60<br>42                         | 13<br>13 | 27<br>45 | 68                      | 0                         | 1.88<br>0.55               | 57                                | 28         | 29 | CH           | 1.37<br>1.34      | 33.6<br>35.0               | 30.4<br>36.7       |
| 353      | Bozwell      | 0-6<br>6-12      | LS<br>SCL      | 81<br>61                         | 12<br>10 | 7<br>29  | 52                      | 0                         | 1.15<br>0.86               | 39                                | 18         | 21 | CL           | 1.23<br>1.36      | 42.4<br>36.5               | 32.7<br>35.2       |
| 354      | Bibb         | 0-6<br>6-12      | S<br>S         | 89<br>88                         | 6<br>7   | 5<br>5   | 25                      | 0                         | 1.05<br>0.55               | 19**                              | Nonplastic | SM | 1.49<br>1.47 | 26.0<br>26.3      | 23.2<br>23.0               |                    |
| 355      | Byars        | 0-6<br>6-12      | SL<br>SL       | 55<br>63                         | 38<br>30 | 7<br>7   | 44                      | 0                         | 3.27<br>1.25               | NV                                | Nonplastic | SM | 1.50<br>1.52 | 26.6<br>24.4      | 19.2<br>16.6               |                    |
| 356      | Flint        | 0-6<br>6-12      | SL<br>SL       | 72<br>65                         | 21<br>23 | 7<br>12  | 49                      | 0                         | 0.62<br>0.32               | 17**                              | Nonplastic | SM | 1.42<br>1.43 | 29.6<br>29.4      | 23.4<br>22.8               |                    |
| 357      | Geiger       | 0-6<br>6-12      | CL<br>CL       | 39<br>42                         | 28<br>27 | 33<br>31 | 62                      | 0                         | 3.13<br>1.25               | 45                                | 20         | 25 | CL           | 1.46<br>1.43      | 30.7<br>30.0               | 24.2<br>22.4       |

(Continued)

\*\* Modified technique.

NV No value.



Table B2a (Concluded)

| Site No. | Soil Series | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class.  | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|-------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|--------------|-------------------|----------------------------|--------------------|
|          |             |                   |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PL         | PI |              |                   | Saturation                 | Atmosphere Tension |
|          |             |                   |                |                                  |          |          |                         |                           |                            |                                   |            |    |              |                   |                            |                    |
| 358      | Stough      | 0-6<br>6-12       | SL<br>SL       | 59<br>73                         | 33<br>20 | 8<br>7   | 33                      | 0                         | 3.13<br>0.38               | 13**                              | Nonplastic | SM | 1.57<br>1.68 | 20.6<br>17.7      | 16.8<br>12.8               |                    |
| 359      | Sumter      | 0-6<br>6-12       | SiCL<br>SiCL   | 15<br>13                         | 50<br>56 | 35<br>31 | 92                      | 0                         | 3.62<br>1.32               | 51                                | 24         | 27 | CH<br>CH     | 1.36<br>1.50      | 34.9<br>27.6               | 32.6<br>28.8       |
| 360      | Catalpa     | 0-6<br>6-12       | SiL<br>SiCL    | 13<br>10                         | 62<br>54 | 25<br>36 | 96                      | 0                         | 3.13<br>2.35               | 63                                | 27         | 36 | CH<br>CH     | 1.37<br>1.28      | 34.0<br>40.7               | 32.3<br>40.2       |
| 361      | Sumter      | 0-6<br>6-12       | SiCL<br>SiC    | 20<br>13                         | 53<br>47 | 27<br>40 | 95                      | 0                         | 1.25<br>0.70               | 60                                | 22         | 38 | CH<br>CH     | 1.42<br>1.46      | 31.6<br>31.2               | 30.4<br>30.7       |
| 362      | Sumter      | 0-6<br>6-12       | SiL<br>SiCL    | 21<br>15                         | 56<br>51 | 23<br>34 | 90                      | 0                         | 2.35<br>1.45               | 58                                | 26         | 32 | CH<br>CH     | 1.40<br>1.38      | 30.6<br>34.8               | 28.3<br>34.3       |
| 364      | Eutaw       | 0-6<br>6-12       | CL<br>CL       | 24<br>20                         | 46<br>42 | 30<br>38 | 90                      | 0                         | 2.23<br>0.55               | 49                                | 20         | 29 | CL<br>CL     | 1.40<br>1.48      | 31.6<br>29.5               | 29.8<br>29.0       |
| 365      | Huckabee    | 0-6<br>6-12       | LS<br>LS       | 78<br>81                         | 15<br>13 | 7<br>6   | 26                      | 0                         | 1.15<br>0.95               | 16**                              | Nonplastic | SM | 1.48<br>1.56 | 26.6<br>23.4      | 16.4<br>15.4               |                    |
| 366      | Byars       | 0-6<br>6-12       | SCL<br>CL      | 53<br>45                         | 22<br>21 | 25<br>34 | 68                      | 0                         | 1.45<br>0.78               | 40                                | 19         | 21 | CL<br>CL     | 1.46<br>1.49      | 27.5<br>28.5               | 24.9<br>27.6       |
| 367      | Pheba       | 0-6<br>6-12       | SL<br>SL       | 65<br>62                         | 29<br>30 | 6<br>8   | 48                      | 0                         | 1.65<br>0.38               | 13**                              | Nonplastic | SM | 1.56<br>1.62 | 22.0<br>21.1      | 17.7<br>17.4               |                    |
| 368      | Bibb        | 0-6<br>6-12       | SiL<br>L       | 30<br>43                         | 53<br>37 | 17<br>20 | 75                      | 0                         | 3.77<br>0.86               | 26                                | 16         | 10 | CL<br>CL     | 1.34<br>1.50      | 34.3<br>25.6               | 31.4<br>24.3       |
| 369      | Cuthbert    | 0-6<br>6-12       | SL<br>SCL      | 75<br>52                         | 18<br>23 | 7<br>25  | 59                      | 0                         | 0.95<br>0.62               | 31                                | 15         | 16 | CL<br>CL     | 1.51<br>1.64      | 24.3<br>21.2               | 18.0<br>20.0       |

\*\* Modified technique.



Table B2b  
Soil Properties of Strength-moisture Survey Sites  
Northeastern Region

| Site No. | Soil Series | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |            | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|--------------------|----------------|----------------------------------|------------|------------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |             |                    |                | Sand                             | Silt       | Clay       |                         |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Atmosphere Tension |
| 1        | Tioga       | 0-6<br>6-12        | SiL<br>SiL     | 35<br>33                         | 52<br>52   | 13<br>15   | 81                      | 0                         | 0.95<br>0.78               | 27                                | 22         | 5  | CL-ML       | 1.43<br>1.60      | 32.1<br>25.2               | 27.0<br>21.8       |
| 2        | Tioga       | 0-6<br>6-12        | SL<br>SL       | 70<br>62                         | 25<br>35   | 5<br>3     | 55                      | 0                         | 2.08<br>1.55               | 26**                              | Nonplastic |    | ML          | 0.98<br>1.14      | 53.7<br>44.2               | 32.2<br>33.7       |
| 3        | Lackawanna  | 0-6<br>6-12        | SiL<br>SiL     | 28<br>28                         | 72<br>59   | 13<br>13   | 85                      | 15                        | 4.15<br>1.77               | 26                                | 22         | 4  | ML          | 1.22<br>1.51      | 41.8<br>28.5               | 31.0<br>25.3       |
| 4        | Canfield    | 0-6<br>6-12        | C<br>C         | 16<br>16                         | 41<br>41   | 43<br>43   | 90                      | 20                        | 4.52<br>1.88               | 32                                | 23         | 9  | ML          | 0.94<br>1.46      | 68.6<br>30.9               | 50.4<br>25.6       |
| 5        | Papakating  | 0-6<br>6-12        | Muck<br>Muck   | 30*<br>35*                       | 51*<br>56* | 19*<br>9*  | 70*                     | 0                         | 26.29<br>21.85             | NV                                | Nonplastic |    | OL          | 0.56††<br>0.53††  | 135.5<br>141.8             | 120.5<br>133.3     |
| 6        | Wooster     | 0-6<br>6-12        | SiL<br>SiL     | 24<br>20                         | 63<br>67   | 13<br>13   | 90                      | 20                        | 3.00<br>2.23               | 32                                | 24         | 8  | ML          | 1.13<br>1.24      | 49.5<br>43.4               | 30.6<br>30.2       |
| 7        | Tioga       | 0-6<br>6-12        | SL<br>SL       | 75<br>76                         | 21<br>17   | 4<br>7     | 33                      | 0                         | 2.60<br>1.15               | 19**                              | Nonplastic |    | SM          | 1.16<br>1.42      | 51.9<br>34.3               | 31.1<br>22.4       |
| 8        | Holly       | 0-6<br>6-12        | L<br>SL        | 41<br>57                         | 49<br>33   | 10<br>10   | 51                      | 0                         | 2.87<br>1.45               | 25                                | 23         | 2  | ML          | 1.28<br>1.54      | 39.9<br>27.9               | 35.1<br>24.3       |
| 9        | Tioga       | 0-6<br>6-12        | SL<br>SL       | 60<br>75                         | 35<br>20   | 5<br>5     | 36                      | 5                         | 1.77<br>0.86               | 20**                              | Nonplastic |    | SM          | 1.38<br>1.46      | 34.3<br>29.6               | 23.9<br>16.8       |
| 10       | Huntington  | 0-6<br>6-12        | L<br>L         | 37*<br>38                        | 48*<br>47  | 15*<br>15  | 68                      | 10                        | 4.05<br>2.47               | 31                                | 22         | 9  | ML          | 1.28<br>1.49      | 41.2<br>30.9               | 32.7<br>25.2       |
| 11       | Hagerstown  | 0-6<br>6-12        | SiL<br>SiL     | 27<br>25                         | 56<br>54   | 17<br>21   | 82                      | 10                        | 1.25<br>0.86               | 26                                | 18         | 8  | CL          | 1.33<br>1.62      | 37.8<br>24.9               | 29.8<br>21.0       |
| 12       | Hublersburg | 0-6<br>6-12        | SL<br>SL       | 76<br>71                         | 14<br>12   | 10<br>17   | 31                      | 0                         | 0.78<br>0.55               | 17                                | 13         | 4  | SM          | 1.57<br>1.69      | 26.1<br>21.7               | 16.3<br>15.9       |
| 13       | Hublersburg | 0-6<br>6-12        | SL<br>SL       | 75<br>74                         | 17<br>17   | 8<br>9     | 30                      | 10                        | 1.25<br>0.95               | 14**                              | Nonplastic |    | SM          | 1.36<br>1.69      | 36.4<br>21.9               | 18.6<br>12.7       |
| 14       | Wiltshire   | 0-6<br>6-12        | SiL<br>SiL     | 30<br>26                         | 58<br>51   | 12<br>13   | 82                      | 10                        | 3.62<br>3.27               | 31                                | 23         | 8  | ML          | 1.34<br>1.24      | 36.3<br>42.6               | 27.3<br>32.1       |
| 15       | Wiltshire   | 0-6<br>6-12        | SiL<br>SiL     | 18<br>20                         | 64<br>58   | 18<br>22   | 89                      | 0                         | 7.18<br>1.65               | 33                                | 22         | 11 | CL          | 1.21<br>1.58      | 42.7<br>27.1               | 35.8<br>24.2       |
| 16       | Andover     | 0-6<br>6-12        | SiL<br>SiL     | 26<br>22                         | 58<br>60   | 16<br>18   | 83                      | 0                         | 1.65<br>1.45               | 28                                | 20         | 8  | CL          | 1.37<br>1.49      | 35.8<br>29.4               | 30.9<br>26.0       |
| 17       | Lindside    | 0-6<br>6-12        | L<br>L         | 39*<br>37*                       | 44*<br>48* | 17*<br>15* | 70*                     | 10                        | 4.80<br>4.91               | 41                                | 26         | 15 | ML          | 1.36<br>1.36      | 37.3<br>35.1               | 30.6<br>30.2       |
| 18       | Elkars      | 0-6<br>6-12        | SiL<br>SiL     | 16*<br>13*                       | 60*<br>63* | 24*<br>24* | 92*                     | 0                         | 5.12<br>4.53               | 43                                | 30         | 13 | ML          | 1.21<br>1.34      | 42.7<br>38.8               | 37.3<br>35.0       |
| 19       | Elkins      | 0-6<br>6-12        | L<br>SL        | 46<br>58                         | 44<br>31   | 10<br>11   | 49                      | 0                         | 4.15<br>3.54               | 25                                | 24         | 1  | SM          | 1.30<br>1.25      | 42.1<br>44.6               | 35.6<br>40.6       |
| 20       | Atkins      | 0-6<br>6-12        | L<br>L         | 33<br>34                         | 49<br>41   | 18<br>25   | 74                      | 0                         | 2.08<br>0.70               | 25                                | 18         | 7  | CL-ML       | 1.38<br>1.67      | 35.0<br>22.6               | 29.4<br>19.2       |
| 21       | Outhrie     | 0-6<br>6-12        | SiL<br>SiL     | 16<br>11                         | 63<br>67   | 16<br>22   | 93                      | 0                         | 4.90<br>2.75               | 40                                | 25         | 15 | CL          | 1.20<br>1.48      | 46.2<br>30.8               | 38.8<br>27.1       |
| 22       | Duffield    | 0-6<br>6-12        | SiL<br>SiCL    | 20<br>15                         | 54<br>49   | 26<br>36   | 89                      | 5                         | 3.41<br>1.65               | 41                                | 24         | 17 | CL          | 1.27<br>1.40      | 40.2<br>35.2               | 29.7<br>28.9       |
| 23       | Duffield    | 0-6<br>6-12        | SiL<br>SiL     | 17<br>17                         | 61<br>59   | 22<br>24   | 88                      | 5                         | 1.65<br>1.45               | 33                                | 23         | 10 | CL          | 1.46<br>1.47      | 30.9<br>30.7               | 26.6<br>25.6       |

(Continued)

\* Adjusted value.

\*\* Modified technique.

†† Bulk density and moisture content values questionable.



Table B2b (Continued)

| Site No. | Soil Series | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |            | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|--------------------|----------------|----------------------------------|------------|------------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |             |                    |                | Sand                             | Silt       | Clay       |                         |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Atmosphere Tension |
| 24       | Pope        | 0-6<br>6-12        | LS<br>LS       | 79*<br>75*                       | 15*<br>20* | 5*<br>5*   | 30*                     | 0                         | 7.21<br>3.47               | NV                                | Nonplastic | SM |             | 1.17††<br>1.05††  | 47.3<br>57.5               | 25.0<br>35.6       |
| 25       | Clymer      | 0-6<br>6-12        | L<br>L         | 33<br>32                         | 49<br>48   | 18<br>20   | 71                      | 10                        | 3.5*<br>2.08               | 32                                | 21         | 11 | CL          | 1.33<br>1.56      | 36.9<br>47.4               | 30.6<br>33.9       |
| 26       | Clymer      | 0-6<br>6-12        | S1L<br>S1L     | 28*<br>27*                       | 56*<br>52* | 16*<br>21* | 80*                     | 20                        | 6.13<br>2.68               | 34                                | 23         | 11 | CL          | 1.09<br>1.14      | 53.1<br>43.4               | 44.6<br>30.0       |
| 27       | Gilpin      | 0-6<br>6-12        | S1L<br>S1L     | 28<br>28                         | 52<br>52   | 20<br>20   | 78                      | 15                        | 3.62<br>1.77               | 32                                | 22         | 10 | CL          | 1.44<br>1.48      | 33.2<br>31.5               | 27.1<br>17.6       |
| 28       | Ernest      | 0-6<br>6-12        | L<br>L         | 36<br>32                         | 47<br>48   | 17<br>20   | 77                      | 0                         | 3.27<br>1.35               | 37                                | 24         | 13 | CL          | 1.33<br>1.43      | 41.6<br>33.1               | 35.9<br>29.2       |
| 29       | Lickdale    | 0-6<br>6-12        | L<br>L         | 42*<br>42*                       | 44*<br>42* | 14*<br>15* | 55*                     | 15                        | 6.66<br>4.70               | 35                                | 23         | 12 | CL          | 1.22<br>1.42      | 46.9<br>34.7               | 40.2<br>28.9       |
| 30       | Ernest      | 0-6<br>6-12        | S1L<br>S1L     | 20<br>17                         | 51<br>53   | 19<br>20   | 80                      | 0                         | 3.62<br>1.98               | 35                                | 24         | 11 | CL          | 1.17<br>1.42      | 48.6<br>33.6               | 40.0<br>29.3       |
| 31       | Ernest      | 0-6<br>6-12        | L<br>L         | 48<br>48                         | 39<br>36   | 13<br>15   | 59                      | 0                         | 2.35<br>1.25               | 26                                | 19         | 7  | CL-ML       | 1.44<br>1.60      | 33.5<br>25.1               | 27.1<br>20.8       |
| 32       | Atkins      | 0-6<br>6-12        | L<br>L         | 35<br>35                         | 43<br>43   | 22<br>22   | 74                      | 0                         | 2.87<br>2.75               | 34                                | 24         | 10 | ML          | 1.39<br>1.43      | 36.6<br>32.8               | 32.3<br>28.9       |
| 33       | Philo       | 0-6<br>6-12        | S1L<br>S1L     | 28<br>25                         | 56<br>55   | 16<br>20   | 83                      | 0                         | 3.13<br>2.37               | 38                                | 25         | 13 | ML          | 1.20<br>1.39      | 46.8<br>34.6               | 38.2<br>30.9       |
| 34       | Brinkerton  | 0-6<br>6-12        | CL<br>L        | 34*<br>47*                       | 38*<br>36* | 18*<br>17* | 60*                     | 5                         | 6.88<br>4.84               | 44                                | 26         | 18 | CL          | 0.67††<br>1.42††  | 121.1<br>37.0              | 106.1<br>33.6      |
| 35       | Philo       | 0-6<br>6-12        | L<br>L         | 41<br>35                         | 46<br>47   | 3<br>18    | 76                      | 0                         | 5.34<br>4.90               | 31                                | 25         | 12 | ML          | 1.23<br>1.40      | 52.3<br>34.4               | 40.6<br>30.9       |
| 36       | Holly       | 0-6<br>6-12        | S1L<br>S1L     | 26<br>21                         | 53<br>61   | 11<br>18   | 89                      | 0                         | 5.12<br>4.60               | 40                                | 26         | 14 | ML          | 1.15<br>1.24      | 50.9<br>44.0               | 44.1<br>39.8       |
| 37       | Holly       | 0-6<br>6-12        | S1L<br>S1L     | 39<br>33                         | 51<br>55   | 10<br>12   | 80                      | 0                         | 2.75<br>2.35               | 30                                | 23         | 7  | ML          | 1.36<br>1.21      | 36.2<br>44.7               | 31.8<br>40.7       |
| 38       | Holly       | 0-6<br>6-12        | S1L<br>S1L     | 17*<br>19                        | 70*<br>65  | 13*<br>16  | 89                      | 0                         | 4.70<br>4.35               | 41                                | 29         | 12 | ML          | 1.30<br>1.18      | 39.1<br>46.3               | 33.5<br>40.8       |
| 39       | Braceville  | 0-6<br>6-12        | L<br>L         | 43<br>40                         | 49<br>46   | 8<br>14    | 70                      | 10                        | 4.15<br>1.60               | 25                                | 21         | 4  | CL-ML       | 1.22<br>1.40      | 43.3<br>32.8               | 32.8<br>26.2       |
| 40       | Tioga       | 0-6<br>6-12        | S1L<br>S1L     | 37<br>34                         | 54<br>52   | 9<br>14    | 80                      | 0                         | 5.02<br>4.34               | 29                                | 25         | 4  | ML          | 1.23<br>1.27      | 43.0<br>41.2               | 33.3<br>33.2       |
| 41       | Tioga       | 0-6<br>6-12        | S1L<br>S1L     | 32<br>32                         | 60<br>57   | 8<br>11    | 75                      | 0                         | 4.34<br>2.47               | 24                                | 20         | 4  | ML          | 1.19<br>1.38      | 45.7<br>34.3               | 37.9<br>28.2       |
| 42       | Tioga       | 0-6<br>6-12        | SL<br>S1L      | 47<br>42                         | 48<br>57   | 5<br>11    | 87                      | 0                         | 4.15<br>3.62               | 30                                | 25         | 5  | ML          | 1.24<br>1.23      | 42.2<br>43.4               | 33.6<br>35.1       |
| 43       | Frenchtown  | 0-6<br>6-12        | S1L<br>S1L     | 14<br>23                         | 67<br>56   | 9<br>11    | 37                      | 5                         | 6.04<br>5.12               | 45                                | 34         | 11 | ML          | 1.02<br>1.22      | 51.3<br>45.3               | 49.2<br>38.7       |
| 44       | Unadilla    | 0-6<br>6-12        | S1L<br>S1L     | 22<br>22                         | 64<br>64   | 14<br>14   | 88                      | 0                         | 3.69<br>0.95               | 27                                | 11         | 5  | CL-ML       | 1.08<br>1.37      | 53.0<br>37.0               | 43.4<br>32.9       |
| 45       | Unadilla    | 0-6<br>6-12        | S1L<br>S1L     | 40<br>20                         | 51<br>65   | 9<br>15    | 92                      | 0                         | 2.75<br>1.25               | 17                                | 22         | 5  | ML          | 1.07<br>1.8       | 51.4<br>34.9               | 40.3<br>31.5       |
| 46       | Tyler       | 0-6<br>6-12        | Muck<br>S1CL   | 15*<br>16*                       | 48*<br>51* | 17*<br>23* | 22*                     | 0                         | 4.74<br>2.76               | 23                                | 40         | 13 | SH          | 0.37††<br>0.97††  | 129.9<br>35.5              | 89.1<br>59.7       |

(Continued)

\* Adjusted values.

† Bulk density and moisture content values questionable.

NV No value.



Table B2b (Continued)

| Site No. | Soil Series | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |           |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|--------------------|----------------|----------------------------------|-----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |             |                    |                | Sand                             | Silt      | Clay     |                         |                           |                            | LL                                | PL         | PT |             |                   | Saturation                 | Atmosphere Tension |
| 47       | Chenango    | 0-6<br>6-12        | S1L<br>S1L     | 35<br>35                         | 54<br>54  | 11<br>11 | 70                      | 5                         | 5.46<br>4.15               | 34                                | 27         | 7  | ML          | 0.90<br>1.18      | 72.4<br>43.8               | 51.0<br>35.6       |
| 48       | Unadilla    | 0-6<br>6-12        | S1L<br>S1L     | 29<br>32                         | 60<br>56  | 11<br>12 | 86                      | 0                         | 3.62<br>1.45               | 25                                | 20         | 5  | CL-ML       | 1.10<br>1.40      | 51.9<br>32.7               | 46.1<br>29.2       |
| 49       | Lakemont    | 0-6<br>6-12        | S1CL<br>S1C    | 14<br>10                         | 53<br>41  | 33<br>49 | 97                      | 0                         | 6.40<br>3.41               | 57                                | 27         | 30 | CH          | 1.12<br>1.43      | 51.0<br>33.5               | 46.4<br>30.0       |
| 50       | Lakemont    | 0-6<br>6-12        | S1L<br>S1L     | 16<br>13                         | 54<br>64  | 20<br>23 | 95                      | 0                         | 4.34<br>2.23               | 38                                | 23         | 15 | CL          | 1.34<br>1.44      | 37.2<br>32.7               | 33.0<br>29.0       |
| 52       | Schoharie   | 0-6<br>6-12        | S1L<br>S1C     | 21<br>12                         | 54<br>46  | 25<br>42 | 94                      | 0                         | 5.34<br>1.65               | 46                                | 24         | 22 | CL          | 1.21<br>1.48      | 43.9<br>32.0               | 37.9<br>29.1       |
| 53       | Junius      | 0-6<br>6-12        | L<br>L         | 48<br>50                         | 43<br>42  | 9<br>8   | 69                      | 0                         | 4.70<br>2.60               | 25                                | 21         | 4  | CL-ML       | 1.35<br>1.48      | 35.4<br>30.0               | 29.2<br>25.6       |
| 54       | Junius      | 0-6<br>6-12        | L<br>L         | 48<br>48                         | 45<br>45  | 7<br>7   | 60                      | 0                         | 6.04<br>2.79               | NV                                | Nonplastic |    | ML          | 1.25<br>1.44      | 42.6<br>31.2               | 35.8<br>27.3       |
| 55       | Fulton      | 0-6<br>6-12        | L<br>L         | 42<br>44                         | 49<br>45  | 9<br>11  | 68                      | 0                         | 4.70<br>3.13               | 27                                | 19         | 8  | CL          | 1.37<br>1.49      | 34.3<br>30.2               | 29.1<br>26.6       |
| 56       | Collamer    | 0-6<br>6-12        | S1L<br>S1L     | 28<br>24                         | 63<br>59  | 9<br>17  | 85                      | 0                         | 4.90<br>3.00               | 28**                              | 19         | 9  | CL          | 1.33<br>1.40      | 41.6<br>37.8               | 27.0<br>27.7       |
| 57       | Dunkirk     | 0-6<br>6-12        | SL<br>L        | 50<br>45                         | 45<br>47  | 5<br>8   | 77                      | 0                         | 5.02<br>1.88               | 23**                              | 20         | 3  | ML          | 1.28<br>1.45      | 39.8<br>30.9               | 31.9<br>25.6       |
| 58       | Berrien     | 0-6<br>6-12        | SL<br>LS       | 70<br>78                         | 27<br>17  | 3<br>5   | 49                      | 0                         | 3.62<br>1.15               | 21**                              | Nonplastic |    | SM          | 1.22<br>1.52      | 41.9<br>26.6               | 31.2<br>22.4       |
| 59       | Ovid        | 0-6<br>6-12        | SL<br>SL       | 56<br>54                         | 41<br>39  | 3<br>7   | 62                      | 0                         | 6.40<br>4.39               | 28                                | 27         | 1  | ML          | 1.06<br>1.16      | 54.9<br>47.6               | 42.1<br>41.1       |
| 60       | Ovid        | 0-6<br>6-12        | S1L<br>S1L     | 27<br>31                         | 62<br>57  | 11<br>12 | 80                      | 0                         | 5.68<br>5.68               | 49                                | 35         | 14 | ML          | 1.13<br>1.08      | 50.5<br>53.2               | 45.0<br>47.8       |
| 61       | Eel         | 0-6<br>6-12        | SL<br>L        | 50<br>44                         | 45<br>48  | 5<br>8   | 74                      | 0                         | 5.80<br>5.34               | 34                                | 30         | 4  | ML          | 0.99<br>1.36      | 61.0<br>36.7               | 51.1<br>32.3       |
| 62       | Tioga       | 0-6<br>6-12        | S1L<br>S1L     | 31*<br>40                        | 60*<br>52 | 9*<br>8  | 76                      | 0                         | 4.15<br>3.54               | 30**                              | Nonplastic |    | ML          | 1.21<br>1.26      | 44.6<br>40.6               | 31.4<br>29.9       |
| 63       | Tioga       | 0-6<br>6-12        | S1L<br>L       | 33<br>42                         | 55<br>40  | 12<br>18 | 84                      | 0                         | 4.90<br>1.77               | 31                                | 22         | 9  | CL          | 1.27<br>1.38      | 41.9<br>35.4               | 30.7<br>26.1       |
| 64       | Tioga       | 0-6<br>6-12        | S1L<br>SL      | 41<br>55                         | 52<br>37  | 7<br>8   | 63                      | 0                         | 5.80<br>2.23               | 27**                              | 26         | 1  | ML          | 1.00<br>1.27      | 62.8<br>41.6               | 48.8<br>34.0       |
| 65       | Huntington  | 0-6<br>6-12        | L<br>SL        | 52<br>53                         | 41<br>37  | 7<br>10  | 58                      | 0                         | 5.92<br>4.15               | 32                                | 27         | 5  | ML          | 0.96<br>1.14      | 67.2<br>50.1               | 50.4<br>34.0       |
| 66       | Huntington  | 0-6<br>6-12        | L<br>SL        | 49*<br>66                        | 40*<br>25 | 11*<br>9 | 46                      | 0                         | 4.05<br>2.60               | 22**                              | 22         | 0  | SM          | 0.96<br>1.21      | 63.0<br>44.6               | 43.4<br>28.8       |
| 67       | Melvin      | 0-6<br>6-12        | S1L<br>S1L     | 17<br>14                         | 64<br>61  | 19<br>25 | 92                      | 0                         | 3.41<br>1.25               | 37                                | 24         | 13 | CL          | 1.33<br>1.40      | 38.6<br>36.0               | 32.4<br>32.4       |
| 68       | Wheeling    | 0-6<br>6-12        | S1CL<br>S1CL   | 20<br>20                         | 57<br>57  | 23<br>23 | 88                      | 0                         | 2.47<br>1.25               | 30                                | 21         | 9  | CL          | 1.35<br>1.46      | 36.9<br>31.4               | 29.5<br>26.8       |
| 69       | Dunmore     | 0-6<br>6-12        | S1L<br>S1CL    | 13<br>12                         | 64<br>51  | 23<br>37 | 92                      | 0                         | 4.15<br>2.47               | 50                                | 24         | 26 | CL          | 1.29<br>1.54      | 41.0<br>29.0               | 34.6<br>26.0       |
| 70       | Araby       | 0-6<br>6-12        | S1L<br>S1L     | 14<br>12                         | 72<br>69  | 14<br>19 | 93                      | 0                         | 3.41<br>3.41               | 37                                | 25         | 12 | ML          | 1.36<br>1.41      | 36.4<br>35.3               | 31.6<br>31.1       |
| 71       | Galen       | 0-6<br>6-12        | SL<br>SL       | 66<br>67                         | 31<br>30  | 3<br>3   | 59                      | 0                         | 4.52<br>3.69               | 26**                              | 26         | 0  | ML          | 1.23<br>1.36      | 57.8<br>34.6               | 30.9<br>27.6       |

(Continued)

\* Adjusted value.

\*\* Modified technique.

NV No value.



Table B2b (Continued)

| Site No. | Soil Series  | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |            | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|--------------------|----------------|----------------------------------|------------|------------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |              |                    |                | Sand                             | Silt       | Clay       |                         |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Atmosphere Tension |
| 72       | Brockport    | 0-6<br>6-12        | S1L<br>L       | 33<br>35                         | 50<br>45   | 17<br>20   | 77                      | 5                         | 6.04<br>4.70               | 43                                | 24         | 13 | CL          | 1.23<br>1.51      | 43.9<br>28.7               | 37.4<br>25.4       |
| 73       | Madeland     | 0-6<br>6-12        | L<br>SL        | 51<br>53                         | 40<br>32   | 9<br>15    | 73                      | 5                         | 5.12<br>4.15               | 27                                | 20         | 7  | CL-ML       | 1.40<br>1.58      | 32.9<br>25.2               | 34.7<br>20.3       |
| 74       | Lockport     | 0-6<br>6-12        | CL<br>S1L      | 25<br>20                         | 45<br>61   | 30<br>19   | 92                      | 0                         | 5.56<br>3.13               | 44                                | 23         | 21 | CL          | 1.39<br>1.56      | 29.9<br>28.0               | 30.0<br>25.4       |
| 75       | Hilton       | 0-6<br>6-12        | S1L<br>S1L     | 35<br>34                         | 54<br>52   | 11<br>14   | 80                      | 5                         | 5.80<br>4.52               | 28                                | 20         | 8  | CL          | 1.26<br>1.53      | 41.8<br>28.8               | 32.7<br>23.7       |
| 76       | Romulus      | 0-6<br>6-12        | S1L<br>CL      | 34<br>26                         | 51<br>46   | 15<br>28   | 87                      | 0                         | 3.27<br>1.05               | 32                                | 13         | 17 | CL          | 1.57<br>1.74      | 27.7<br>21.5               | 23.8<br>19.0       |
| 77       | Colwood      | 0-6<br>6-12        | SL<br>SL       | 53*<br>53*                       | 42*<br>42* | 5*<br>5*   | 60*                     | 0                         | 14.84<br>12.99             | NV                                | Nonplastic |    | OL          | 1.06<br>1.16      | 54.2<br>46.6               | 43.3<br>40.8       |
| 78       | Muck         | 0-6<br>6-12        | Muck<br>Muck   | 22*<br>22*                       | 53*<br>53* | 25*<br>25* | 85*                     | 0                         | 14.65<br>11.45             | NV                                | Nonplastic |    | OL          | 0.70††<br>0.83††  | 103.4<br>83.2              | 90.9<br>76.5       |
| 79       | Wolcottsburg | 0-6<br>6-12        | S1L<br>S1L     | 14<br>7                          | 68<br>57   | 18<br>26   | 95                      | 0                         | 3.51<br>0.70               | 37                                | 25         | 12 | ML          | 1.29<br>1.60      | 43.1<br>28.1               | 36.5<br>25.1       |
| 80       | Tonawanda    | 0-6<br>6-12        | S1L<br>S1L     | 15<br>25                         | 72<br>72   | 13<br>13   | 94                      | 0                         | 6.60<br>5.56               | 53                                | 35         | 18 | SM          | 1.10<br>1.24      | 53.9<br>42.9               | 43.7<br>37.4       |
| 101      | Merrimac     | 0-6<br>6-12        | SL<br>SL       | 55<br>52                         | 42<br>43   | 3<br>5     | 60                      | 0                         | 4.05<br>1.65               | 26**                              | Nonplastic |    | ML          | 1.19<br>1.37      | 46.4<br>35.8               | 38.7<br>27.6       |
| 102      | Rumney       | 0-6<br>6-12        | SL<br>SL       | 50<br>51                         | 45<br>33   | 5<br>6     | 56                      | 0                         | 3.96<br>1.25               | 25**                              | Nonplastic |    | ML          | 1.07<br>1.28      | 57.6<br>41.2               | 48.4<br>33.1       |
| 104      | Cheshire     | 0-6<br>6-12        | S1L<br>L       | 41<br>41                         | 50<br>49   | 9<br>10    | 67                      | 0                         | 5.34<br>2.87               | 25                                | 21         | 4  | ML          | 1.09<br>1.32      | 53.5<br>37.6               | 38.7<br>29.0       |
| 105      | Cheshire     | 0-6<br>6-12        | SL<br>SL       | 57<br>54                         | 37<br>38   | 8<br>8     | 55                      | 10                        | 3.27<br>3.00               | 23                                | 20         | 3  | ML          | 1.39<br>1.44      | 34.1<br>32.2               | 24.5<br>26.9       |
| 106      | Ludlow       | 0-6<br>6-12        | SL<br>SL       | 62*<br>58                        | 30*<br>33  | 8*<br>9    | 49                      | 0                         | 4.52<br>2.23               | 24                                | 18         | 6  | SM          | 1.25<br>1.49      | 43.5<br>29.1               | 30.8<br>21.4       |
| 107      | Ludlow       | 0-6<br>6-12        | L<br>L         | 48<br>50                         | 45<br>29   | 7<br>11    | 60                      | 0                         | 3.96<br>1.98               | 22                                | 17         | 5  | CL-ML       | 1.06<br>1.35      | 57.4<br>36.2               | 32.9<br>24.5       |
| 108      | Elmwood      | 0-6<br>6-12        | S1L<br>S1L     | 21<br>19                         | 67<br>67   | 12<br>14   | 89                      | 0                         | 4.05<br>2.60               | 32                                | 29         | 3  | ML          | 1.12<br>1.39      | 52.9<br>36.5               | 44.4<br>32.0       |
| 109      | Chalker      | 0-6<br>6-12        | S1L<br>S1L     | 32<br>34                         | 59<br>55   | 9<br>11    | 82                      | 0                         | 4.34<br>2.23               | 27                                | 27         | 0  | ML          | 1.18<br>1.41      | 50.1<br>35.4               | 43.9<br>31.6       |
| 110      | Elmwood      | 0-6<br>6-12        | L<br>L         | 45<br>37                         | 45<br>38   | 10<br>25   | 73                      | 0                         | 3.62<br>1.05               | 32                                | 21         | 11 | CL          | 1.19<br>1.49      | 48.3<br>31.5               | 39.4<br>27.8       |
| 111      | Hadley       | 0-6<br>6-12        | S1L<br>S1L     | 30<br>26                         | 67<br>67   | 3<br>7     | 89                      | 0                         | 2.75<br>2.23               | 25                                | 23         | 0  | ML          | 1.32<br>1.36      | 38.9<br>35.9               | 33.6<br>31.4       |
| 112      | Carver       | 0-6<br>6-12        | LS<br>LS       | 84<br>84                         | 12<br>12   | 4<br>4     | 22                      | 0                         | 1.77<br>0.86               | 16**                              | Nonplastic |    | SM          | 1.07<br>1.48      | 60.8<br>31.3               | 28.7<br>13.2       |
| 113      | Merrimac     | 0-6<br>6-12        | S1L<br>SL      | 59<br>56                         | 36<br>40   | 5<br>4     | 57                      | 0                         | 3.41<br>1.05               | 22**                              | Nonplastic |    | ML          | 1.08<br>1.27      | 54.1<br>38.8               | 40.5<br>28.0       |
| 114      | Merrimac     | 0-6<br>6-12        | LS<br>LS       | 75<br>78                         | 21<br>18   | 4<br>4     | 30                      | 0                         | 1.88<br>1.45               | 16**                              | Nonplastic |    | SM          | 1.53<br>1.56      | 28.3<br>25.7               | 19.9<br>19.1       |
| 115      | Merrimac     | 0-6<br>6-12        | SL<br>SL       | 71<br>70                         | 24<br>25   | 5<br>5     | 41                      | 0                         | 1.98<br>1.05               | 18**                              | Nonplastic |    | SM          | 1.45<br>1.65      | 31.0<br>24.0               | 22.0<br>18.9       |

(Continued)

\* Adjusted value.

\*\* Modified technique.

†† Bulk density and moisture content values questionable.

NV No value.



Table B2b (Continued)

| Site No. | Soil Series | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|-------------------|----------------|----------------------------------|------------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |             |                   |                | Sand                             | Silt       | Clay     |                         |                           |                            | LL                                | PL         | PT |             |                   | Saturation                 | Atmosphere tension |
| 116      | Infield     | 0-6<br>6-12       | SiL<br>SiL     | 41<br>30                         | 54<br>64   | 5<br>6   | 85                      | 0                         | 4.90<br>2.23               | 31**                              | Nonplastic |    | ML          | 0.68**<br>1.12**  | 112.7<br>51.4              | 73.9<br>37.9       |
| 117      | Infield     | 0-6<br>6-12       | SL<br>SiL      | 47<br>40                         | 51<br>50   | 4<br>5   | 72                      | 10                        | 3.00<br>1.98               | 24**                              | Nonplastic |    | ML          | 1.30<br>1.42      | 40.4<br>34.8               | 30.1<br>27.1       |
| 118      | Grousewater | 0-6<br>6-12       | SL<br>SL       | 69<br>69                         | 27<br>27   | 4<br>4   | 45                      | 8                         | 1.77<br>1.45               | 20**                              | Nonplastic |    | SM          | 1.23<br>1.57      | 46.0<br>27.1               | 26.8<br>19.1       |
| 119      | Merrimac    | 0-6<br>5-12       | SL<br>SL       | 62<br>54                         | 35<br>32   | 4<br>4   | 47                      | 0                         | 4.70<br>2.75               | 23**                              | 17         | 6  | SC-SM       | 1.15<br>1.54      | 50.1<br>28.5               | 32.2<br>20.2       |
| 120      | Walpole     | 0-6<br>6-12       | SL<br>SL       | 56<br>60                         | 40<br>32   | 4<br>8   | 52                      | 5                         | 5.02<br>3.69               | 25                                | 25         | 0  | ML          | 1.08**<br>1.37**  | 55.6<br>36.9               | 39.9<br>29.2       |
| 121      | Agawan      | 0-6<br>6-12       | LS<br>LS       | 80<br>80                         | 16<br>16   | 4<br>4   | 35                      | 0                         | 1.77<br>1.45               | 18**                              | Nonplastic |    | SM          | 1.42<br>1.55      | 35.0<br>27.9               | 23.1<br>22.6       |
| 122      | Merrimac    | 0-6<br>6-12       | LS<br>LS       | 81<br>81                         | 15<br>15   | 4<br>4   | 25                      | 0                         | 3.13<br>2.23               | 21**                              | Nonplastic |    | SM          | 1.36<br>1.51      | 38.3<br>30.3               | 21.3<br>16.4       |
| 123      | Ondawa      | 0-6<br>6-12       | S<br>S         | 87<br>87                         | 11<br>11   | 2<br>2   | 21                      | 0                         | 2.35<br>2.23               | 24**                              | Nonplastic |    | SY          | 1.44<br>1.41      | 34.7<br>35.5               | 16.0<br>18.4       |
| 124      | Rumney      | 0-6<br>6-12       | SL<br>SL       | 69<br>69                         | 26<br>26   | 5<br>5   | 49                      | 0                         | 3.77<br>1.33               | 26**                              | Nonplastic |    | SM          | 1.13<br>1.25      | 51.0<br>41.0               | 41.7<br>34.6       |
| 125      | Woodbridge  | 0-6<br>6-12       | SL<br>SL       | 63<br>67                         | 33<br>28   | 4<br>5   | 47                      | 0                         | 2.60<br>1.65               | 22**                              | Nonplastic |    | SM          | 1.38<br>1.57      | 41.3<br>28.7               | 34.8<br>23.3       |
| 126      | Woodbridge  | 0-6<br>6-12       | SiL<br>SL      | 30<br>48                         | 63<br>47   | 7<br>5   | 65                      | 0                         | 5.34<br>3.27               | 32**                              | Nonplastic |    | ML          | 1.13<br>1.31      | 54.3<br>43.5               | 42.8<br>36.9       |
| 127      | Woodbridge  | 0-6<br>6-12       | SL<br>SL       | 51*<br>52*                       | 44*<br>44* | 5*<br>4* | 60                      | 0                         | 7.18<br>5.39               | NV                                | Nonplastic |    | ML          | 1.04<br>1.28      | 64.6<br>43.3               | 49.4<br>33.9       |
| 128      | Buxton      | 0-6<br>6-12       | SL<br>L        | 66<br>50                         | 22<br>28   | 12<br>22 | 56                      | 0                         | 2.87<br>1.25               | 26                                | 19         | 7  | CL-ML       | 1.36**<br>1.53**  | 36.5<br>29.0               | 29.2<br>24.3       |
| 129      | Suffield    | 0-6<br>6-12       | SiL<br>SiL     | 23<br>22                         | 66<br>64   | 11<br>14 | 85                      | 0                         | 4.52<br>3.77               | 29                                | 23         | 6  | ML          | 1.25<br>1.34      | 42.7<br>37.3               | 34.9<br>32.2       |
| 130      | Melrose     | 0-6<br>6-12       | SL<br>SL       | 53<br>50                         | 43<br>44   | 4<br>6   | 62                      | 0                         | 5.34<br>2.23               | 23                                | 23         | 0  | ML          | 0.89<br>1.16      | 73.7<br>49.7               | 51.6<br>37.9       |
| 131      | Merrimac    | 0-6<br>6-12       | LS<br>LS       | 81<br>85                         | 16<br>12   | 3<br>3   | 22                      | 0                         | 4.04<br>2.60               | 17**                              | Nonplastic |    | SM          | 1.16<br>1.45      | 40.9<br>29.9               | 23.2<br>13.9       |
| 132      | Merrimac    | 0-6<br>6-12       | LS<br>S        | 85<br>87                         | 12<br>10   | 3<br>3   | 21                      | 0                         | 2.23<br>1.98               | 18**                              | Nonplastic |    | SM          | 1.20<br>1.40      | 44.7<br>32.7               | 22.7<br>22.1       |
| 133      | Merrimac    | 0-6<br>6-12       | S<br>S         | 93<br>96                         | 5<br>2     | 2<br>2   | 7                       | 0                         | 3.54<br>2.87               | 22**                              | Nonplastic |    | SM          | 1.30<br>1.43      | 39.6<br>32.9               | 13.2<br>10.6       |
| 134      | Scarboro    | 0-6<br>6-12       | SiL<br>SL      | 44<br>70                         | 53<br>25   | 3<br>5   | 47                      | 0                         | 6.28<br>4.70               | 26**                              | Nonplastic |    | SM          | 1.04<br>1.35      | 64.7<br>39.0               | 56.5<br>35.7       |
| 135      | Merrimac    | 0-6<br>6-12       | LS<br>S        | 84<br>87                         | 14<br>10   | 2<br>3   | 23                      | 0                         | 3.27<br>1.88               | 19**                              | Nonplastic |    | SM          | 1.21<br>1.45      | 45.4<br>37.0               | 24.1<br>17.7       |
| 136      | Merrimac    | 0-6<br>6-12       | S<br>S         | 87<br>90                         | 12<br>8    | 1<br>2   | 20                      | 0                         | 3.62<br>1.98               | 20**                              | Nonplastic |    | SM          | 1.16<br>1.35      | 48.8<br>38.1               | 22.3<br>16.5       |
| 137      | Walpole     | 0-6<br>6-12       | SL<br>SL       | 61*<br>61*                       | 35*<br>35* | 4*<br>4* | 45*                     | 0                         | 4.54<br>4.80               | NV                                | Nonplastic |    | SM          | 0.99**<br>1.67**  | 70.9<br>24.2               | 58.4<br>19.0       |
| 138      | Merrimac    | 0-6<br>6-12       | SL<br>SL       | 67<br>66                         | 30<br>30   | 3<br>4   | 47                      | 10                        | 6.04<br>3.77               | 28**                              | Nonplastic |    | SM          | 1.03<br>1.15      | 56.3<br>54.4               | 44.4<br>38.0       |

(Continued)

\* Adjusted value.

\*\* Modified technique.

†† Bulk density and moisture content values questionable.

NV No value.



Table B2b (Continued)

| Site No. | Soil Series | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |            | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class.      | Bulk Densit, g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|-------------------|----------------|----------------------------------|------------|------------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|------------------|-------------------|----------------------------|--------------------|
|          |             |                   |                | Sand                             | Silt       | Clay       |                         |                           |                            | LL                                | PL         | PI |                  |                   | Saturation                 | Atmosphere Tension |
|          |             |                   |                |                                  |            |            |                         |                           |                            |                                   |            |    |                  |                   |                            |                    |
| 139      | Rumney      | 0-6<br>6-12       | LS<br>S        | 84<br>88                         | 14<br>9    | 2<br>3     | 14                      | 15                        | 3.86<br>1.98               | NV                                | Nonplastic | SM | 1.42††<br>1.70†† | 54.1<br>22.8      | 21.0<br>14.7               |                    |
| 140      | Acton       | 0-6<br>6-12       | SL<br>SL       | 65<br>60                         | 33<br>37   | 2<br>4     | 63                      | 0                         | 4.70<br>3.62               | 29**                              | Nonplastic | ML | 1.20<br>1.09     | 56.7<br>54.3      | 42.4<br>47.0               |                    |
| 141      | Sudbury     | 0-6<br>6-12       | SL<br>SL       | 77<br>55                         | 27<br>41   | 3<br>4     | 61                      | 0                         | 5.46<br>3.96               | 32**                              | Nonplastic | ML | 0.99<br>0.76     | 63.4<br>64.7      | 51.0<br>58.5               |                    |
| 142      | Colton      | 0-6<br>6-12       | SL<br>SL       | 62*<br>62*                       | 34*<br>34* | 4*<br>4*   | 45*                     | 0                         | 1.51<br>5.48               | N7                                | Nonplastic | SM | 0.35<br>1.26     | 70.4<br>43.1      | 90.4<br>70.6               |                    |
| 143      | Leicester   | 0-6<br>6-12       | SIL<br>SIL     | 34*<br>34*                       | 69*<br>60* | 6*<br>6*   | 70*                     | 0                         | 4.38<br>3.01               | NV                                | Nonplastic | ML | 1.19<br>1.47     | 47.6<br>31.7      | 75.9<br>27.1               |                    |
| 144      | Agawam      | 0-6<br>6-12       | S.L<br>SL      | 10*<br>10                        | 75*<br>81  | 7*<br>9    | 92                      | 0                         | 3.27<br>3.13               | NV                                | Nonplastic | ML | 1.13<br>1.24     | 46.5<br>43.2      | 40.3<br>38.4               |                    |
| 145      | Winooski    | 0-6<br>6-12       | SL<br>S.L      | 60<br>40                         | 35<br>56   | 5<br>4     | 81                      | 0                         | 2.23<br>2.23               | 31**                              | 31         | 0  | ML               | 1.22<br>1.28      | 45.0<br>43.8               | 37.0<br>38.0       |
| 146      | Buxton      | 0-6<br>6-12       | SIL<br>SIL     | 13<br>12                         | 72<br>73   | 13<br>16   | 92                      | 0                         | 1.33<br>0.66               | 27**                              | 21         | 6  | CL-ML            | 1.26<br>1.39      | 43.3<br>36.0               | 37.6<br>32.5       |
| 147      | Faxon       | 0-6<br>6-12       | L<br>SIL       | 45*<br>5*                        | 44*<br>75* | 11*<br>10* | 97*                     | 0                         | 2.60<br>0.78               | 28                                | 28         | 0  | ML               | 1.47<br>1.43      | 49.7<br>33.8               | 38.9<br>28.6       |
| 148      | Sudbury     | 0-6<br>6-12       | SL<br>SIL      | 50<br>43                         | 46<br>51   | 4<br>6     | 68                      | 0                         | 4.15<br>3.62               | 32                                | 30         | 2  | ML               | 1.11††<br>1.35††  | 50.1<br>37.0               | 45.2<br>31.0       |
| 149      | Scarboro    | 0-6<br>6-12       | SL<br>SL       | 48*<br>48*                       | 47*<br>47* | 5*<br>5*   | 50*                     | 0                         | 6.20<br>3.15               | NV                                | Nonplastic | ML | 0.86<br>0.94     | 78.7<br>69.0      | 59.9<br>46.6               |                    |
| 150      | Undana      | 0-6<br>6-12       | SL<br>SL       | 54*<br>54*                       | 40*<br>40* | 6*<br>6*   | 49*                     | 0                         | 5.72<br>6.11               | NV                                | Nonplastic | SM | 0.99<br>0.87     | 59.5<br>82.2      | 46.8<br>73.2               |                    |
| 151      | Hudson      | 0-6<br>6-12       | SIL<br>SIL     | 9<br>7                           | 75<br>71   | 16<br>22   | 96                      | 0                         | 3.96<br>2.47               | 38                                | Nonplastic | ML | 1.23<br>1.40     | 47.2<br>35.4      | 40.3<br>32.2               |                    |
| 152      | Phinebeck   | 0-6<br>6-12       | SIL<br>SILT    | 20<br>13                         | 62<br>55   | 18<br>32   | 91                      | 0                         | 5.92<br>2.23               | 31**                              | 20         | 11 | CL               | 1.28<br>1.46      | 43.8<br>34.2               | 33.0<br>29.6       |
| 153      | Genesee     | 0-6<br>6-12       | L<br>L         | 45<br>45                         | 42<br>42   | 13<br>13   | 68                      | 0                         | 5.46<br>3.62               | 27**                              | 19         | 8  | CL               | 1.30<br>1.55      | 41.2<br>28.4               | 31.8<br>21.1       |
| 154      | Colonie     | 0-6<br>6-12       | SL<br>SL       | 49<br>55                         | 48<br>38   | 3<br>7     | 69                      | 0                         | 1.88<br>1.05               | 19                                | 19         | 0  | ML               | 1.35<br>1.53      | 38.4<br>31.5               | 29.5<br>24.3       |
| 155      | Swanton     | 0-6<br>6-12       | L<br>SL        | 40<br>57                         | 49<br>39   | 11<br>4    | 64                      | 0                         | 1.45<br>0.86               | 20**                              | Nonplastic | ML | 1.29<br>1.53     | 56.1<br>29.1      | 34.1<br>23.0               |                    |
| 156      | Atherton    | 0-6<br>6-12       | SIL<br>L       | 36<br>48                         | 51<br>39   | 13<br>13   | 63                      | 0                         | 5.24<br>1.98               | 22                                | 18         | 4  | ML               | 1.15††<br>1.55††  | 53.0<br>30.7               | 42.9<br>25.0       |
| 158      | Albia       | 0-6<br>6-12       | L<br>SL        | 51<br>53                         | 39<br>33   | 10<br>14   | 56                      | 0                         | 4.90<br>3.54               | 23                                | 17         | 5  | CL-ML            | 1.10<br>1.45      | 47.1<br>32.3               | 27.1<br>21.6       |

\* Adjusted value.

\*\* Modified technique.

†† Bulk density and moisture content values questionable.

NV No value.



Table B2c  
Soil Properties of Strength-moisture Survey Sites  
Lake States Region

| Site No. | Soil Series | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |    |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |              |
|----------|-------------|--------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|----|----|-------------|-------------------|----------------------------|--------------------|--------------|
|          |             |                    |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PL | PI |             |                   | Saturation                 | Atmosphere Tension |              |
|          |             |                    |                |                                  |          |          |                         |                           |                            |                                   |    |    |             |                   |                            |                    |              |
| 1        | Glouster    | 0-6<br>6-12        | SIL<br>SIL     | 34<br>35                         | 57<br>52 | 9<br>13  | 74                      | 4                         | 3.27<br>0.78               | 22                                | 18 | 4  | CL-ML       | 1.35<br>1.40      | 34.1<br>34.2               | 29.3<br>28.0       |              |
| 2        | Painfield   | 0-6<br>6-12        | LS<br>S        | 83<br>89                         | 14<br>8  | 3<br>3   | 13                      | 1                         | 1.27<br>1.25               | 16**                              |    |    | Nonplastic  | SM                | 1.31<br>1.56               | 33.7<br>21.1       | 20.3<br>11.6 |
| 3        | Waukesha    | 0-6<br>6-12        | LS<br>S        | 86<br>88                         | 11<br>8  | 3<br>4   | 17                      | 0                         | 3.27<br>0.86               | 15**                              |    |    | Nonplastic  | SM                | 1.21<br>1.34               | 41.6<br>33.4       | 22.3<br>13.5 |
| 4        | Genesee     | 0-6<br>6-12        | L<br>SL        | 50<br>53                         | 41<br>35 | 9<br>12  | 54                      | 0                         | 3.62<br>1.65               | 24                                | 16 | 8  | CL          | 1.35<br>1.55      | 30.9<br>22.7               | 21.2<br>15.0       |              |
| 5        | Genesee     | 0-6<br>6-12        | LS<br>S        | 81<br>89                         | 15<br>8  | 4<br>3   | 14                      | 3                         | 1.65<br>0.78               | 15**                              |    |    | Nonplastic  | SM                | 1.21<br>1.48               | 37.8<br>25.8       | 29.1<br>17.9 |
| 6        | Waukesha    | 0-6<br>6-12        | LS<br>LS       | 88<br>88                         | 8<br>8   | 4<br>4   | 13                      | 1                         | 2.36<br>1.25               | NV                                |    |    | Nonplastic  | SM                | 1.48<br>1.64               | 26.2<br>20.3       | 16.3<br>10.7 |
| 7        | Coloma      | 0-6<br>6-12        | LS<br>LS       | 84<br>87                         | 13<br>9  | 3<br>4   | 17                      | 1                         | 1.88<br>0.55               | 11**                              |    |    | Nonplastic  | SM                | 1.34<br>1.55               | 33.5<br>23.1       | 16.9<br>12.0 |
| 8        | Coloma      | 0-6<br>6-12        | LS<br>LS       | 83<br>81                         | 13<br>13 | 4<br>4   | 19                      | 1                         | 2.60<br>0.70               | NV                                |    |    | Nonplastic  | SM                | 1.22<br>1.47               | 41.8<br>27.0       | 30.0<br>10.0 |
| 9        | Waukesha    | 0-6<br>6-12        | LS<br>S        | 82<br>88                         | 15<br>8  | 3<br>4   | 16                      | 1                         | 1.88<br>0.78               | 11**                              |    |    | Nonplastic  | SM                | 1.33<br>1.57               | 32.1<br>22.3       | 16.4<br>12.7 |
| 10       | Miami       | 0-6<br>6-12        | LS<br>LS       | 79<br>77                         | 17<br>19 | 4<br>4   | 29                      | 0                         | 0.95<br>0.86               | 14**                              |    |    | Nonplastic  | SM                | 1.47<br>1.59               | 28.6<br>22.0       | 12.0<br>12.8 |
| 11       | Miami       | 0-6<br>6-12        | SIL<br>SIL     | 17<br>13                         | 74<br>74 | 9<br>13  | 97                      | 0                         | 2.75<br>1.05               | 26                                | 21 | 5  | CL-ML       | 1.23<br>1.37      | 37.8<br>34.0               | 30.7<br>25.7       |              |
| 12       | Miami       | 0-6<br>6-12        | SL<br>L        | 51<br>50                         | 42<br>38 | 7<br>12  | 63                      | 0                         | 3.27<br>0.78               | 20                                | 15 | 5  | CL-ML       | 1.27<br>1.48      | 36.7<br>26.9               | 28.7<br>21.0       |              |
| 13       | Carrington  | 0-6<br>6-12        | L<br>L         | 49<br>50                         | 43<br>43 | 8<br>7   | 59                      | 2                         | 2.87<br>1.77               | 20                                | 15 | 5  | CL-ML       | 1.44<br>1.49      | 28.2<br>27.9               | 21.6<br>22.3       |              |
| 14       | Carrington  | 0-6<br>6-12        | SIL<br>SIL     | 12<br>11                         | 72<br>77 | 16<br>12 | 96                      | 1                         | 5.56<br>5.56               | 43                                | 28 | 15 | CL          | 1.22<br>1.08      | 44.2<br>51.0               | 38.9<br>38.1       |              |
| 15       | Janesville  | 0-6<br>6-12        | SIL<br>SIL     | 22<br>32                         | 55<br>56 | 23<br>12 | 72                      | 4                         | 2.47<br>2.35               | 27                                | 18 | 9  | CL          | 1.29<br>1.36      | 42.1<br>35.8               | 27.9<br>25.6       |              |
| 16       | Edgerton    | 0-6<br>6-12        | SIL<br>SIL     | 13<br>9                          | 75<br>80 | 12<br>11 | 96                      | 0                         | 2.87<br>1.98               | 30                                | 23 | 7  | CL          | 1.26<br>1.26      | 40.8<br>47.2               | 33.5<br>40.3       |              |
| 17       | Afton       | 0-6<br>6-12        | LS<br>LS       | 81<br>85                         | 15<br>11 | 4<br>4   | 23                      | 0                         | 1.25<br>0.78               | 12**                              |    |    | Nonplastic  | SM                | 1.62<br>1.53               | 20.5<br>23.2       | 12.3<br>10.4 |
| 18       | O'Neill     | 0-6<br>6-12        | SIL<br>SIL     | 25<br>25                         | 56<br>60 | 19<br>15 | 82                      | 0                         | 5.34<br>5.24               | 47                                | 28 | 19 | ML          | 1.26<br>1.26      | 42.3<br>42.9               | 32.9<br>34.7       |              |
| 19       | O'Neill     | 0-6<br>6-12        | SIL<br>L       | 32<br>45                         | 51<br>43 | 17<br>12 | 59                      | 0                         | 6.04<br>4.70               | 33**                              | 20 | 13 | CL          | 1.11<br>1.20      | 48.7<br>41.3               | 37.6<br>34.6       |              |
| 20       | Omarga      | 0-6<br>6-12        | SL<br>SL       | 55<br>55                         | 34<br>38 | 11<br>7  | 52                      | 0                         | 3.77<br>2.87               | 22                                | 15 | 7  | CL-ML       | 1.14<br>1.48      | 41.4<br>24.6               | 33.7<br>24.0       |              |
| 22       | Miami       | 0-6<br>6-12        | SIL<br>SIL     | 15<br>10                         | 75<br>72 | 10<br>13 | 96                      | 0                         | 3.41<br>0.78               | 27                                | 20 | 7  | CL-ML       | 1.22<br>1.22      | 40.6<br>39.3               | 30.5<br>28.0       |              |
| 23       | Muscantine  | 0-6<br>6-12        | SIL<br>SIL     | 20<br>18                         | 72<br>72 | 8<br>10  | 89                      | 0                         | 5.12<br>4.15               | 38                                | 24 | 14 | CL          | 1.30<br>1.31      | 36.3<br>34.9               | 32.4<br>29.6       |              |
| 24       | Sable       | 0-6<br>6-12        | SIL<br>SIL     | 20<br>18                         | 67<br>64 | 13<br>18 | 91                      | 0                         | 5.56<br>5.02               | 49                                | 28 | 21 | CL          | 1.09<br>1.34      | 50.6<br>34.7               | 42.7<br>32.5       |              |

(Continued)

\*\* Modified technique.

NV No value.



Table B2c (Continued)

| Site No. | Soil Series | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|-------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |             |                   |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PL         | PT |             |                   | Saturation                 | Atmosphere Tension |
| 25       | Sable       | 0-6<br>6-12       | SIL<br>SIL     | 16<br>11                         | 73<br>69 | 11<br>20 | 97                      | 0                         | 5.34<br>4.70               | 48                                | 29         | 19 | ML          | 1.20<br>1.18      | 42.6<br>42.8               | 38.3<br>37.5       |
| 26       | Tama        | 0-6<br>6-12       | SIL<br>SIL     | 14<br>10                         | 73<br>75 | 13<br>15 | 97                      | 0                         | 5.12<br>3.77               | 46                                | 29         | 17 | ML          | 1.06<br>1.20      | 49.7<br>40.9               | 45.6<br>35.0       |
| 27       | Huntsville  | 0-6<br>6-12       | SL<br>SIL      | 59<br>56                         | 33<br>34 | 8<br>10  | 54                      | 0                         | 2.87<br>2.08               | 23                                | 16         | 7  | CL-ML       | 1.54<br>1.54      | 25.7<br>22.5               | 20.4<br>17.3       |
| 28       | Harpster    | 0-6<br>6-12       | SIL<br>SIL     | 15<br>16                         | 67<br>70 | 18<br>14 | 94                      | 0                         | 5.34<br>4.90               | 44                                | 27         | 17 | ML          | 1.15<br>1.21      | 44.9<br>40.7               | 31.4<br>27.9       |
| 29       | Hartsburg   | 0-6<br>6-12       | SIL<br>SIL     | 29<br>24                         | 60<br>53 | 11<br>23 | 84                      | 0                         | 4.15<br>2.87               | 37                                | 21         | 16 | CL          | 1.36<br>1.50      | 34.1<br>27.4               | 31.8<br>26.1       |
| 30       | Hagner      | 0-6<br>6-12       | LS<br>LS       | 80<br>86                         | 16<br>11 | 4<br>3   | 19                      | 0                         | 1.77<br>0.70               | 16**                              | Nonplastic |    | SM          | 1.52<br>1.59      | 26.5<br>23.3               | 9.4<br>8.1         |
| 31       | Muscataine  | 0-6<br>6-12       | SIL<br>SIL     | 13<br>10                         | 71<br>74 | 16<br>16 | 99                      | 0                         | 3.27<br>1.45               | 35                                | 23         | 12 | CL          | 1.21<br>1.38      | 45.2<br>35.4               | 37.8<br>29.5       |
| 34       | Clinton     | 0-6<br>6-12       | SIL<br>SIL     | 15<br>10                         | 73<br>75 | 12<br>15 | 99                      | 0                         | 2.75<br>1.45               | 30                                | 23         | 7  | CL          | 1.32<br>1.29      | 35.1<br>37.6               | 31.1<br>31.8       |
| 35       | Genesee     | 0-6<br>6-12       | SIL<br>SIL     | 20<br>10                         | 69<br>73 | 11<br>17 | 98                      | 0                         | 3.41<br>2.47               | 39                                | 25         | 14 | CL          | 1.40<br>1.44      | 33.6<br>30.6               | 30.9<br>29.6       |
| 36       | Fayette     | 0-6<br>6-12       | SL<br>SL       | 57<br>67                         | 27<br>24 | 6<br>9   | 41                      | 0                         | 1.65<br>1.55               | 16**                              | Nonplastic |    | SM          | 1.45<br>1.50      | 26.3<br>22.7               | 22.6<br>18.3       |
| 37       | Clinton     | 0-6<br>6-12       | SIL<br>SIL     | 13<br>12                         | 64<br>55 | 23<br>33 | 93                      | 0                         | 3.62<br>2.35               | 45                                | 23         | 22 | CL          | 1.33<br>1.34      | 36.4<br>39.1               | 29.8<br>35.5       |
| 38       | Fayette     | 0-6<br>6-12       | SIL<br>SIL     | 14<br>10                         | 73<br>73 | 13<br>17 | 100                     | 2                         | 4.80<br>2.87               | 36                                | 23         | 13 | CL          | 1.38<br>1.30      | 36.4<br>39.1               | 30.7<br>34.3       |
| 39       | Dubuque     | 0-6<br>6-12       | SIL<br>SIL     | 16<br>9                          | 69<br>70 | 15<br>21 | 99                      | 3                         | 2.75<br>0.95               | 34                                | 21         | 13 | CL          | 1.34<br>1.35      | 35.0<br>35.5               | 30.6<br>27.9       |
| 40       | Dodgeville  | 0-6<br>6-12       | SIL<br>SIL     | 13<br>9                          | 71<br>67 | 16<br>24 | 99                      | 0                         | 2.08<br>1.33               | 59                                | 21         | 18 | CL          | 1.33<br>1.30      | 35.0<br>35.6               | 31.6<br>30.1       |
| 41       | Clinton     | 0-6<br>6-12       | SIL<br>SIL     | 23<br>10                         | 67<br>76 | 10<br>14 | 98                      | 0                         | 3.96<br>2.35               | 36                                | 24         | 12 | CL          | 1.35<br>1.35      | 34.8<br>36.0               | 30.6<br>31.1       |
| 42       | Tama        | 0-6<br>6-12       | SIL<br>SIL     | 14<br>10                         | 77<br>75 | 9<br>15  | 98                      | 0                         | 6.04<br>4.52               | 42                                | 26         | 16 | CL          | 1.29<br>1.29      | 38.9<br>41.5               | 34.9<br>35.8       |
| 43       | Dubuque     | 0-6<br>6-12       | SIL<br>SIL     | 18<br>13                         | 76<br>80 | 5<br>7   | 96                      | 1                         | 2.75<br>2.08               | 25**                              | Nonplastic |    | ML          | 1.27<br>1.22      | 39.0<br>39.7               | 32.6<br>34.4       |
| 44       | Boone       | 0-6<br>6-12       | S<br>S         | 91<br>94                         | 5<br>4   | 4<br>2   | 11                      | 0                         | 1.55<br>0.38               | 12**                              | Nonplastic |    | SM          | 1.24<br>1.52      | 39.6<br>25.5               | 25.2<br>5.8        |
| 45       | Plainfield  | 0-6<br>6-12       | LS<br>S        | 75<br>91                         | 21<br>6  | 4<br>3   | 10                      | 0                         | 0.95<br>0.55               | 10**                              | Nonplastic |    | SM          | 1.44<br>1.51      | 28.2<br>20.7               | 15.1<br>6.9        |
| 46       | Union       | 0-6<br>6-12       | SIL<br>SIL     | 18<br>12                         | 72<br>72 | 10<br>16 | 97                      | 0                         | 2.35<br>0.70               | 27                                | 22         | 5  | CL-ML       | 1.29<br>1.39      | 35.2<br>31.6               | 32.0<br>27.9       |
| 47       | Boone       | 0-6<br>6-12       | SL<br>SL       | 70<br>73                         | 24<br>20 | 6<br>7   | 31                      | 0                         | 2.35<br>1.55               | 15**                              | Nonplastic |    | SM          | 1.54<br>1.56      | 23.4<br>22.4               | 19.4<br>15.4       |
| 48       | Boone       | 0-6<br>6-12       | SIL<br>SIL     | 24<br>16                         | 65<br>73 | 11<br>11 | 91                      | 0                         | 3.13<br>3.13               | 27                                | 21         | 6  | CL-ML       | 1.39<br>1.27      | 31.9<br>37.8               | 24.2<br>32.1       |
| 49       | Vesper      | 0-6<br>6-12       | SL<br>SL       | 52<br>54                         | 44<br>36 | 4<br>10  | 51                      | 2                         | 2.50<br>1.05               | 16                                | 14         | 2  | ML          | 1.37<br>1.46      | 36.2<br>27.6               | 25.7<br>22.5       |
| 50       | Union       | 0-6<br>6-12       | SIL<br>SIL     | 25<br>26                         | 64<br>56 | 11<br>18 | 79                      | 1                         | 3.00<br>0.55               | 26                                | 19         | 7  | CL-ML       | 1.37<br>1.43      | 34.7<br>30.7               | 27.2<br>25.4       |

(Continued)

\*\* Modified technique.



Table B2c (Continued)

| Site No. | Soil Series | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|-------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |             |                   |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Atmosphere Tension |
| 51       | Spencer     | 0-6<br>6-12       | SIL<br>SIL     | 25<br>19                         | 65<br>67 | 10<br>14 | 89                      | 2                         | 4.70<br>2.47               | 32                                | 26         | 6  | ML          | 1.12<br>1.22      | 45.6<br>39.5               | 35.8<br>33.8       |
| 52       | Spencer     | 0-6<br>6-12       | SIL<br>SIL     | 21<br>12                         | 70<br>67 | 9<br>21  | 95                      | 3                         | 5.12<br>2.08               | 37                                | 22         | 15 | CL          | 1.20<br>1.27      | 42.4<br>39.0               | 36.4<br>31.5       |
| 53       | Gloucester  | 0-6<br>6-12       | SIL<br>SIL     | 40<br>37                         | 53<br>56 | 7<br>7   | 71                      | 4                         | 3.62<br>1.45               | 21**                              | Nonplastic |    | ML          | 1.28<br>1.33      | 34.2<br>34.1               | 29.7<br>27.3       |
| 54       | Gloucester  | 0-6<br>6-12       | SL<br>SL       | 67<br>71                         | 29<br>25 | 4<br>4   | 29                      | 8                         | 3.96<br>0.86               | 20**                              | Nonplastic |    | SM          | 0.98<br>1.20      | 56.3<br>41.4               | 34.8<br>31.4       |
| 55       | Merrimack   | 0-6<br>6-12       | SIL<br>SIL     | 26<br>20                         | 67<br>72 | 7<br>8   | 86                      | 0                         | 3.77<br>2.60               | 23                                | 21         | 2  | ML          | 1.21<br>1.27      | 41.2<br>38.0               | 35.6<br>32.4       |
| 56       | Gloucester  | 0-6<br>6-12       | SIL<br>SIL     | 22<br>20                         | 68<br>69 | 10<br>11 | 83                      | 5                         | 3.41<br>1.25               | 24                                | 21         | 3  | ML          | 1.25<br>1.26      | 42.0<br>38.6               | 35.3<br>34.2       |
| 58       | Fayette     | 0-6<br>6-12       | SIL<br>SIL     | 14<br>10                         | 72<br>64 | 14<br>26 | 99                      | 0                         | 3.54<br>0.55               | 37                                | 22         | 15 | CL          | 1.30<br>1.46      | 38.6<br>29.7               | 31.5<br>26.0       |
| 59       | Tam         | 0-6<br>6-12       | SIL<br>SIL     | 13<br>10                         | 71<br>76 | 16<br>14 | 98                      | 2                         | 3.77<br>3.77               | 41                                | 26         | 15 | ML          | 1.20<br>1.13      | 41.7<br>38.3               | 35.3<br>34.8       |
| 60       | Dubuque     | 0-6<br>6-12       | L<br>L         | 39<br>47                         | 49<br>39 | 12<br>14 | 59                      | 0                         | 2.87<br>1.45               | 24                                | 15         | 9  | CL          | 1.28<br>1.38      | ---<br>---                 | 29.0<br>29.0       |
| 61       | O'Neill     | 0-6<br>6-12       | SL<br>SL       | 69<br>68                         | 27<br>28 | 4<br>4   | 35                      | 0                         | 5.80<br>3.96               | 21                                | 17         | 4  | SM          | 1.21<br>1.36      | 35.5<br>30.9               | 27.8<br>24.8       |
| 62       | Carrington  | 0-6<br>6-12       | L<br>L         | 49<br>47                         | 43<br>39 | 8<br>14  | 61                      | 0                         | 4.90<br>4.70               | 35                                | 23         | 12 | CL          | 1.10<br>1.32      | 50.1<br>35.6               | 40.2<br>31.3       |
| 63       | Plainfield  | 0-6<br>6-12       | SL<br>SL       | 76<br>70                         | 18<br>20 | 6<br>10  | 34                      | 0                         | 1.45<br>0.95               | 15                                | 13         | 2  | SM          | 1.47<br>1.48      | 26.8<br>25.9               | 20.5<br>19.2       |
| 64       | Clyde       | 0-6<br>6-12       | L<br>L         | 37<br>37                         | 47<br>47 | 16<br>16 | 68                      | 0                         | 4.15<br>1.05               | 30                                | 16         | 14 | CL          | 1.34<br>1.49      | 34.0<br>28.0               | 30.9<br>23.8       |
| 66       | Carrington  | 0-6<br>6-12       | L<br>L         | 40<br>32                         | 45<br>45 | 15<br>23 | 74                      | 0                         | 4.70<br>2.23               | 39                                | 16         | 23 | CL          | 1.28<br>1.37      | 37.0<br>32.6               | 32.2<br>27.7       |
| 67       | Carrington  | 0-6<br>6-12       | SL<br>SL       | 61<br>55                         | 34<br>36 | 5<br>9   | 49                      | 0                         | 5.34<br>2.23               | 22                                | 16         | 6  | SM-SC       | 1.28<br>1.48      | 34.0<br>29.0               | 29.6<br>24.3       |
| 68       | Carrington  | 0-6<br>6-12       | SL<br>LS       | 78<br>78                         | 13<br>17 | 9<br>5   | 28                      | 0                         | 1.25<br>0.86               | 15**                              | Nonplastic |    | SM          | 1.46<br>1.54      | ---<br>---                 | 11.4<br>10.1       |
| 69       | Clinton     | 0-6<br>6-12       | SIL<br>SIL     | 18<br>16                         | 72<br>70 | 10<br>14 | 97                      | 0                         | 3.96<br>1.65               | 27                                | 22         | 5  | CL-ML       | 1.09<br>1.32      | 44.0<br>34.8               | 39.7<br>30.2       |
| 70       | Tam         | 0-6<br>6-12       | SIL<br>SIL     | 14<br>10                         | 67<br>71 | 19<br>19 | 98                      | 0                         | 4.05<br>3.77               | 45                                | 27         | 18 | ML          | 1.30<br>1.22      | 35.7<br>38.2               | 32.4<br>33.6       |
| 71       | Tam         | 0-6<br>6-12       | SIL<br>SIL     | 13<br>10                         | 72<br>72 | 15<br>18 | 96                      | 0                         | 5.12<br>3.96               | 44                                | 26         | 18 | CL          | 1.07<br>1.10      | 48.4<br>46.3               | 38.5<br>39.1       |
| 72       | Muscataine  | 0-6<br>6-12       | SIL<br>SIL     | 12<br>9                          | 69<br>70 | 19<br>21 | 97                      | 0                         | 4.15<br>2.75               | 45                                | 24         | 21 | CL          | 1.26<br>1.13      | 37.4<br>45.3               | 32.4<br>35.3       |
| 73       | Wabash      | 0-6<br>6-12       | SIL<br>SIL     | 19<br>24                         | 63<br>62 | 18<br>14 | 85                      | 0                         | 5.80<br>5.34               | 55                                | 34         | 21 | ME          | 1.02<br>1.01      | 54.2<br>56.9               | 41.7<br>46.2       |
| 74       | Carrington  | 0-6<br>6-12       | SIL<br>SIL     | 33<br>30                         | 53<br>53 | 14<br>17 | 77                      | 0                         | 5.24<br>2.87               | 35                                | 21         | 14 | CL          | 1.20<br>1.26      | 42.5<br>35.4               | 34.5<br>28.3       |
| 75       | Muscataine  | 0-6<br>6-12       | SIL<br>SIL     | 14<br>8                          | 70<br>69 | 16<br>23 | 98                      | 0                         | 4.60<br>3.62               | 41                                | 24         | 17 | CL          | 1.31<br>1.36      | 35.3<br>34.9               | 30.0<br>28.7       |
| 76       | Wabash      | 0-6<br>6-12       | SIL<br>SIL     | 11<br>11                         | 65<br>68 | 24<br>21 | 95                      | 0                         | 5.56<br>4.90               | 47                                | 27         | 20 | CL          | 1.11<br>1.26      | 47.4<br>39.1               | 39.9<br>33.0       |

(Continued)

\*\* Modified technique.



Table B2c (Continued)

| Site No. | Soil Series  | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |    |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|-------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|----|----|-------------|-------------------|----------------------------|--------------------|
|          |              |                   |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PL | PI |             |                   | Saturation                 | Atmosphere Tension |
| 77       | Shelby       | 0-6<br>6-12       | SiL<br>SiL     | 20<br>20                         | 64<br>61 | 16<br>19 | 88                      | 0                         | 5.12<br>3.54               | 39                                | 22 | 17 | CL          | 1.16<br>1.22      | 43.1<br>39.9               | 36.1<br>31.0       |
| 78       | Sharpsburg   | 0-6<br>6-12       | SiL<br>SiL     | 9<br>10                          | 70<br>65 | 21<br>25 | 98                      | 0                         | 5.12<br>4.15               | 14                                | 25 | 19 | CL          | 1.26<br>1.24      | 37.1<br>37.9               | 30.2<br>31.5       |
| 79       | Sharpsburg   | 0-6<br>6-12       | SiL<br>SiL     | 15<br>10                         | 72<br>70 | 13<br>20 | 97                      | 0                         | 5.56<br>4.05               | 45                                | 26 | 19 | CL          | 1.14<br>1.22      | 45.6<br>41.3               | 39.8<br>34.9       |
| 80       | Shelby       | 0-6<br>6-12       | SiL<br>SiC     | 17<br>7                          | 59<br>47 | 24<br>46 | 97                      | 0                         | 4.52<br>3.69               | 51                                | 22 | 29 | CH          | 1.34<br>1.44      | 35.3<br>31.7               | 31.4<br>31.0       |
| 81       | Winterset    | 0-6<br>6-12       | SiL<br>SiL     | 11<br>9                          | 70<br>77 | 19<br>24 | 97                      | 0                         | 5.24<br>3.62               | 45                                | 23 | 22 | CL          | 1.21<br>1.36      | 40.9<br>34.5               | 34.5<br>26.5       |
| 82       | Tam          | 0-6<br>6-12       | SiL<br>SiCL    | 11<br>6                          | 64<br>65 | 25<br>29 | 99                      | 0                         | 2.75<br>0.46               | 47                                | 21 | 26 | CL          | 1.35<br>1.46      | 35.3<br>30.6               | 34.1<br>29.7       |
| 83       | Shelby       | 0-6<br>6-12       | L<br>CL        | 38<br>33                         | 43<br>38 | 19<br>29 | 75                      | 0                         | 2.60<br>1.33               | 41                                | 21 | 20 | CL          | 1.36<br>1.43      | 34.9<br>31.7               | 32.2<br>29.9       |
| 84       | Winterset    | 0-6<br>6-12       | SiL<br>SiL     | 19<br>15                         | 56<br>67 | 15<br>18 | 92                      | 0                         | 4.52<br>4.70               | 47                                | 28 | 19 | ML          | 1.21<br>1.19      | 40.6<br>42.4               | 38.2<br>39.1       |
| 85       | Unclassified | 0-6<br>6-12       | SiCL<br>SiCL   | 7<br>11                          | 37<br>58 | 36<br>31 | 97                      | 0                         | 2.23<br>1.05               | 52                                | 22 | 30 | CH          | 1.02<br>1.31      | 53.6<br>38.5               | 45.7<br>30.7       |
| 86       | Shelby       | 0-6<br>6-12       | SiL<br>SiL     | 12<br>8                          | 65<br>57 | 23<br>25 | 99                      | 0                         | 1.65<br>0.07               | 43                                | 21 | 22 | CL          | 1.34<br>1.32      | 36.1<br>37.0               | 29.5<br>32.3       |
| 87       | Tam          | 0-6<br>6-12       | SiL<br>SiL     | 11<br>11                         | 70<br>64 | 19<br>25 | 91                      | 0                         | 3.62<br>2.60               | 40                                | 23 | 17 | CL          | 1.30<br>1.29      | 35.4<br>37.2               | 31.4<br>32.9       |
| 88       | Wabash       | 0-6<br>6-12       | L<br>SiL       | 41<br>10                         | 50<br>67 | 9<br>23  | 98                      | 0                         | 3.77<br>3.96               | 48                                | 27 | 21 | CL          | 1.1<br>1.1        | 54.0<br>53.5               | 43.2<br>43.2       |
| 89       | Marshall     | 0-6<br>6-12       | SiL<br>SiL     | 13<br>7                          | 68<br>72 | 19<br>21 | 100                     | 0                         | 4.70<br>0.86               | 43                                | 25 | 18 | CL          | 1.13<br>1.08      | 46.9<br>50.7               | 39.1<br>40.2       |
| 90       | Storden      | 0-6<br>6-12       | SiL<br>L       | 33<br>30                         | 50<br>48 | 17<br>22 | 76                      | 0                         | 4.70<br>1.45               | 33                                | 16 | 17 | CL          | 1.21<br>1.38      | 41.2<br>32.6               | 37.0<br>28.9       |
| 91       | O'Neill      | 0-6<br>6-12       | SiL<br>SiL     | 39<br>31                         | 51<br>44 | 10<br>17 | 75                      | 0                         | 5.12<br>3.2                | 34                                | 20 | 14 | CL          | 1.10<br>1.27      | 51.3<br>38.6               | 36.7<br>30.5       |
| 92       | Webster      | 0-6<br>6-12       | SiL<br>L       | 32<br>34                         | 57<br>49 | 11<br>17 | 72                      | 0                         | 5.34<br>4.15               | 43                                | 22 | 21 | CL          | 1.19<br>1.26      | 42.8<br>40.3               | 34.3<br>34.8       |
| 93       | Webster      | 0-6<br>6-12       | SiL<br>L       | 38<br>40                         | 51<br>48 | 11<br>12 | 68                      | 0                         | 4.60<br>4.90               | 50                                | 25 | 25 | CL          | 1.10<br>1.24      | 48.7<br>39.4               | 39.4<br>34.7       |
| 94       | Clarion      | 0-6<br>6-12       | L<br>L         | 35<br>35                         | 46<br>46 | 19<br>19 | 72                      | 0                         | 3.96<br>1.98               | 29                                | 16 | 13 | CL          | 1.46<br>1.54      | 29.2<br>24.2               | 27.8<br>22.9       |
| 95       | Hayden       | 0-6<br>6-12       | SL<br>SL       | 53<br>55                         | 39<br>33 | 8<br>12  | 50                      | 0                         | 4.70<br>3.13               | 32                                | 19 | 13 | CL          | 1.21<br>1.38      | 38.7<br>31.8               | 31.3<br>27.8       |
| 96       | Clarion      | 0-6<br>6-12       | L<br>L         | 45<br>45                         | 40<br>22 | 15<br>12 | 67                      | 0                         | 4.34<br>3.96               | 36                                | 20 | 16 | CL          | 1.19<br>1.23      | 43.9<br>37.1               | 34.1<br>33.8       |
| 97       | Unclassified | 0-6<br>6-12       | SL<br>L        | 52<br>42                         | 44<br>47 | 4<br>11  | 63                      | 0                         | 4.90<br>3.77               | 37                                | 21 | 16 | CL          | 1.18<br>1.22      | 41.9<br>38.6               | 36.4<br>35.6       |
| 98       | Nicolett     | 0-6<br>6-12       | SL<br>L        | 55<br>47                         | 33<br>38 | 12<br>15 | 59                      | 0                         | 5.56<br>5.12               | 43                                | 24 | 19 | CL          | 1.14<br>1.12      | 46.7<br>47.2               | 42.3<br>43.0       |
| 99       | Webster      | 0-6<br>6-12       | SiL<br>SiL     | 15<br>10                         | 71<br>67 | 14<br>23 | 96                      | 0                         | 5.34<br>0.86               | 34                                | 21 | 13 | CL          | 0.98<br>1.15      | 60.0<br>45.0               | 51.6<br>37.9       |
| 102      | Unclassified | 0-6<br>6-12       | SiL<br>SiL     | 31<br>30                         | 56<br>56 | 13<br>14 | 78                      | 0                         | 5.12<br>3.62               | 36                                | 21 | 15 | CL          | 1.17<br>1.37      | 43.4<br>33.6               | 38.3<br>29.7       |

(Continued)



Table E2c (Continued)

| Site No. | Soil Series  | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS<br>Plasticity<br>< 0.075 mm<br>% | Stone<br>Content<br>by<br>Volume<br>% | Organic<br>Matter<br>by<br>Weight<br>% | Plasticity<br>Constants<br>by Weight, % |            |    | USCS<br>Class. | Bulk<br>Density<br>g/cc | Soil Moisture by<br>Weight, % |                       |
|----------|--------------|-------------------|----------------|----------------------------------|----------|----------|---------------------------------------|---------------------------------------|--|---|------------|----|----------------|-------------------------|-------------------------------|-----------------------|
|          |              |                   |                | Sand                             | Silt     | Clay     |                                       |                                       |  | LL                                      | PL         | PI |                |                         | Saturation                    | Atmosphere<br>Tension |
| 103      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 54<br>56                         | 38<br>30 | 8<br>14  | 50                                    | 0                                     | 4.90<br>1.98                           | 24                                      | 15         | 9  | SC             | 1.13<br>1.42            | 49.2<br>29.8                  | 43.4<br>26.6          |
| 104      | Webster      | 0-6<br>6-12       | L<br>L         | 45<br>36                         | 46<br>47 | 19<br>17 | 72                                    | 0                                     | 5.68<br>4.34                           | 46                                      | 28         | 18 | ML             | 1.14<br>1.22            | 45.3<br>42.6                  | 40.7<br>39.0          |
| 105      | Clarion      | 0-6<br>6-12       | L<br>L         | 44<br>41                         | 48<br>39 | 8<br>20  | 68                                    | 0                                     | 5.12<br>1.15                           | 31                                      | 17         | 14 | CL             | 1.06<br>1.34            | 48.9<br>32.0                  | 43.7<br>29.4          |
| 106      | Etter        | 0-6<br>6-12       | SL<br>SL       | 75<br>75                         | 18<br>18 | 7<br>7   | 27                                    | 0                                     | 1.25<br>1.25                           | 17                                      | 16         | 1  | SM             | 1.50<br>1.40            | 24.6<br>27.0                  | 21.5<br>23.0          |
| 107      | Marshan      | 0-6<br>6-12       | SIL<br>SIL     | 38<br>38                         | 54<br>54 | 8<br>8   | 76                                    | 0                                     | 6.28<br>5.68                           | 50                                      | 27         | 23 | CL             | 0.89<br>1.16            | 69.0<br>42.3                  | 59.8<br>36.6          |
| 108      | Jewette      | 0-6<br>6-12       | SIL<br>L       | 41<br>39                         | 50<br>49 | 9<br>12  | 69                                    | 2                                     | 2.87<br>1.25                           | 23                                      | 17         | 6  | CL-ML          | 1.46<br>1.49            | 29.1<br>26.8                  | 25.2<br>21.4          |
| 109      | Onamia       | 0-6<br>6-12       | SIL<br>SIL     | 35<br>24                         | 55<br>65 | 10<br>11 | 83                                    | 5                                     | 5.34<br>4.90                           | 38                                      | 26         | 12 | ML             | 1.05<br>1.21            | 46.6<br>40.6                  | 31.4<br>28.2          |
| 110      | Dakota       | 0-6<br>6-12       | L<br>L         | 43<br>46                         | 47<br>45 | 10<br>9  | 61                                    | 3                                     | 3.13<br>1.88                           | 22                                      | 16         | 6  | CL-ML          | 1.60<br>1.64            | 23.6<br>21.4                  | 21.4<br>20.2          |
| 111      | Milaca       | 0-6<br>6-12       | SL<br>SL       | 65<br>67                         | 26<br>26 | 9<br>7   | 39                                    | 5                                     | 3.13<br>0.95                           | 13**                                    | Nonplastic |    | SM             | 1.30<br>1.65            | 36.6<br>19.4                  | 32.9<br>18.4          |
| 112      | Spooner      | 0-6<br>6-12       | SIL<br>SIL     | 27<br>27                         | 63<br>63 | 10<br>10 | 84                                    | 8                                     | 3.54<br>0.62                           | 25                                      | 17         | 8  | CL             | 1.18<br>1.46            | 42.8<br>26.9                  | 38.0<br>23.3          |
| 113      | Freer        | 0-6<br>6-12       | SIL<br>SIL     | 32<br>32                         | 59<br>58 | 9<br>10  | 81                                    | 4                                     | 3.54<br>2.75                           | 26                                      | 22         | 4  | ML             | 1.43<br>1.33            | 31.6<br>33.9                  | 27.7<br>28.0          |
| 114      | Unclassified | 0-6<br>6-12       | SIL<br>SIL     | 27<br>27                         | 64<br>65 | 9<br>8   | 77                                    | 6                                     | 4.15<br>1.45                           | 22                                      | 22         | 0  | ML             | 1.10<br>1.31            | 47.4<br>31.0                  | 33.6<br>24.8          |
| 115      | Spencer      | 0-6<br>6-12       | L<br>SL        | 52<br>60                         | 38<br>36 | 10<br>4  | 48                                    | 5                                     | 3.41<br>1.65                           | 17**                                    | Nonplastic |    | SC             | 1.06<br>1.34            | 48.3<br>32.7                  | 35.2<br>23.1          |
| 116      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 67<br>71                         | 25<br>25 | 18<br>4  | 42                                    | 3                                     | 2.47<br>1.15                           | 14**                                    | Nonplastic |    | SM             | 1.26<br>1.47            | 34.4<br>25.0                  | 24.2<br>20.7          |
| 117      | Unclassified | 0-6<br>6-12       | SIL<br>SIL     | 36<br>36                         | 53<br>55 | 11<br>9  | 71                                    | 6                                     | 4.70<br>1.25                           | 20                                      | 17         | 3  | ML             | 0.89<br>1.41            | 63.6<br>28.2                  | 45.2<br>24.7          |
| 118      | Plainfield   | 0-6<br>6-12       | SL<br>SL       | 67<br>72                         | 25<br>25 | 8<br>3   | 34                                    | 5                                     | 2.60<br>1.15                           | 14**                                    | Nonplastic |    | SM             | 1.05<br>1.07            | 47.2<br>47.9                  | 34.2<br>34.5          |
| 119      | Vilas        | 0-6<br>6-12       | SL<br>SL       | 62<br>61                         | 33<br>35 | 5<br>4   | 45                                    | 10                                    | 2.87<br>1.45                           | 20**                                    | Nonplastic |    | SM             | 1.01<br>1.20            | 52.7<br>39.8                  | 39.1<br>31.3          |
| 120      | Plainfield   | 0-6<br>6-12       | LS<br>LS       | 82<br>80                         | 14<br>11 | 4<br>3   | 22                                    | 5                                     | 2.87<br>1.05                           | 19**                                    | Nonplastic |    | SM             | 1.09<br>1.16            | 46.1<br>40.1                  | 26.1<br>30.1          |
| 121      | Kennan       | 0-6<br>6-12       | SL<br>SL       | 56<br>60                         | 37<br>34 | 7<br>5   | 47                                    | 8                                     | 4.70<br>2.87                           | 26**                                    | Nonplastic |    | SM             | 0.90<br>1.04            | 60.9<br>51.4                  | 35.9<br>30.2          |
| 122      | Kennan       | 0-6<br>6-12       | SL<br>SL       | 45<br>50                         | 50<br>46 | 5<br>4   | 63                                    | 10                                    | 4.15<br>2.23                           | 25**                                    | Nonplastic |    | ML             | 1.21<br>1.17            | 48.8<br>42.8                  | 40.1<br>34.0          |
| 123      | Ontonagon    | 0-6<br>6-12       | SL<br>LS       | 70<br>73                         | 27<br>23 | 3<br>4   | 36                                    | 10                                    | 4.90<br>1.45                           | 21**                                    | Nonplastic |    | SM             | 1.02<br>1.36            | 56.0<br>34.7                  | 49.5<br>29.5          |
| 124      | Ontonagon    | 0-6<br>6-12       | L<br>C         | 27<br>14                         | 47<br>36 | 26<br>50 | 91                                    | 0                                     | 5.12<br>1.05                           | 55                                      | 22         | 33 | CH             | 1.19<br>1.37            | 43.0<br>36.5                  | 38.8<br>34.7          |
| 125      | Ontonagon    | 0-6<br>6-12       | L<br>CL        | 28<br>21                         | 50<br>41 | 22<br>38 | 84                                    | 0                                     | 6.28<br>1.55                           | 41                                      | 19         | 22 | CL             | 1.05<br>1.43            | 54.7<br>33.9                  | 50.5<br>32.0          |
| 126      | Unclassified | 0-6<br>6-12       | SIL<br>SIL     | 35<br>40                         | 58<br>53 | 7<br>7   | 72                                    | 0                                     | 2.47<br>0.55                           | 17                                      | 17         | 0  | ML             | 1.05<br>1.37            | 52.2<br>30.7                  | 43.1<br>26.3          |

(Continued)

\*\* Modified technique.



Table B2c (Continued)

| Site No. | Soil Series  | Depths Sampled in | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < .075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|-------------------|----------------|----------------------------------|----------|----------|------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |              |                   |                | Sand                             | Silt     | Clay     |                        |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Atmosphere Tension |
| 127      | Unclassified | 0-6<br>6-12       | SIL<br>SIL     | 27<br>22                         | 56<br>70 | 7<br>6   | 92                     | 1                         | 0.00<br>0.70               | 20**                              | Nonplastic |    | ML          | 1.17<br>1.31      | 42.4<br>33.8               | 37.7<br>29.0       |
| 128      | Unclassified | 0-6<br>6-12       | SIL<br>SIL     | 35<br>12                         | 48<br>79 | 7<br>19  | 96                     | 25                        | 1.28<br>1.05               | 23                                | 19         | 4  | CL-ML       | 1.01<br>1.30      | -----<br>-----             | 40.7<br>20.2       |
| 129      | Unclassified | 0-6<br>6-12       | L<br>SACL      | 35<br>15                         | 50<br>57 | 15<br>28 | 88                     | 1                         | 4.05<br>1.15               | 39                                | 22         | 17 | CL          | 1.15<br>1.38      | 47.8<br>34.1               | 40.3<br>30.4       |
| 130      | Hubbard      | 0-6<br>6-12       | SL<br>SL       | 59<br>68                         | 31<br>27 | 6<br>5   | 37                     | 13                        | 4.52<br>1.25               | 16**                              | Nonplastic |    | SM          | 1.22<br>1.40      | 39.8<br>31.2               | 32.0<br>27.6       |
| 131      | Todd         | 0-6<br>6-12       | LS<br>LS       | 81<br>84                         | 15<br>13 | 4<br>3   | 22                     | 8                         | 1.15<br>0.78               | 12**                              | Nonplastic |    | SM          | 1.50<br>1.50      | 26.5<br>22.2               | 22.4<br>17.6       |
| 132      | Menasha      | 0-6<br>6-12       | LS<br>LS       | 85<br>86                         | 10<br>9  | 5<br>5   | 16                     | 3                         | 1.25<br>0.46               | 13**                              | Nonplastic |    | SM          | 1.50<br>1.55      | 25.4<br>23.2               | 10.2<br>9.2        |
| 133      | Hubbard      | 0-6<br>6-12       | SL<br>LS       | 72<br>74                         | 20<br>22 | 5<br>4   | 28                     | 3                         | 2.96<br>2.08               | 16**                              | Nonplastic |    | SM          | 1.47<br>1.52      | 26.1<br>24.8               | 20.6<br>18.4       |
| 134      | Rockwood     | 0-6<br>6-12       | LS<br>SL       | 77<br>73                         | 20<br>22 | 3<br>5   | 33                     | 3                         | 4.60<br>0.86               | 14**                              | Nonplastic |    | SM          | 1.39<br>1.46      | 29.9<br>25.9               | 20.7<br>18.1       |
| 135      | Unclassified | 0-6<br>6-12       | L<br>L         | 44<br>40                         | 49<br>47 | 7<br>13  | 66                     | 2                         | 5.80<br>5.12               | 38                                | 25         | 13 | ML          | 1.08<br>1.31      | 51.1<br>35.6               | 45.0<br>32.9       |
| 136      | Pierce       | 0-6<br>6-12       | SL<br>LS       | 71<br>84                         | 23<br>10 | 6<br>6   | 18                     | 4                         | 5.34<br>2.35               | 15**                              | Nonplastic |    | SM          | 1.12<br>1.50      | 40.8<br>24.8               | 30.3<br>14.3       |
| 137      | Barnes       | 0-6<br>6-12       | L<br>SIL       | 39<br>30                         | 49<br>50 | 12<br>20 | 73                     | 3                         | 4.52<br>2.75               | 34                                | 18         | 16 | CL          | 1.11<br>1.22      | 45.0<br>39.5               | 36.2<br>31.7       |
| 138      | Barnes       | 0-6<br>6-12       | SL<br>SL       | 57<br>50                         | 30<br>32 | 3<br>8   | 48                     | 5                         | 5.34<br>3.96               | 35                                | 21         | 14 | SC          | 0.99<br>1.14      | 55.0<br>45.5               | 45.0<br>35.7       |
| 139      | Fargo        | 0-6<br>6-12       | CL<br>SACL     | 20<br>16                         | 50<br>46 | 30<br>38 | 88                     | 0                         | 5.34<br>0.95               | 55                                | 21         | 34 | CH          | 1.06<br>1.22      | 52.0<br>43.3               | 46.3<br>38.3       |
| 140      | Grimstad     | 0-6<br>6-12       | L<br>SL        | 47<br>58                         | 40<br>27 | 13<br>15 | 79                     | 0                         | 4.05<br>2.75               | 31                                | 18         | 13 | CL          | 1.15<br>1.35      | -----<br>-----             | 31.5<br>26.6       |
| 142      | Ulen         | 0-6<br>6-12       | L<br>SIC       | 27<br>16                         | 49<br>44 | 24<br>40 | 88                     | 0                         | 2.35<br>1.15               | 50                                | 19         | 31 | CL          | 1.34<br>1.44      | 34.1<br>30.1               | 30.4<br>28.4       |
| 143      | Bearden      | 0-6<br>6-12       | L<br>L         | 48<br>51                         | 35<br>30 | 17<br>19 | 62                     | 0                         | 4.70<br>3.00               | 37                                | 19         | 18 | CL          | 1.16<br>1.18      | -----<br>-----             | 35.9<br>35.6       |
| 144      | Unclassified | 0-6<br>6-12       | SIL<br>L       | 37<br>36                         | 51<br>40 | 12<br>24 | 74                     | 0                         | 5.24<br>2.47               | 36                                | 17         | 19 | CL          | 0.96<br>1.26      | 60.3<br>38.7               | 51.6<br>36.2       |
| 146      | Fargo        | 0-6<br>6-12       | SIL<br>SIL     | 12<br>25                         | 70<br>53 | 18<br>22 | 84                     | 0                         | 5.92<br>5.56               | 54                                | 30         | 24 | MR          | 0.98<br>1.12      | 58.2<br>49.1               | 51.3<br>41.9       |
| 147      | Sioux        | 0-6<br>6-12       | SIL<br>SIL     | 35<br>33                         | 54<br>58 | 11<br>9  | 82                     | 0                         | 4.80<br>3.69               | 39                                | 22         | 17 | CL          | 1.23<br>1.24      | 39.2<br>39.1               | 33.9<br>35.3       |
| 148      | Clarion      | 0-6<br>6-12       | SIL<br>SIL     | 30<br>25                         | 63<br>64 | 7<br>11  | 89                     | 0                         | 5.80<br>3.62               | 45                                | 22         | 23 | CL          | 1.22<br>1.25      | 40.0<br>38.8               | 37.6<br>36.5       |
| 149      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 57<br>65                         | 34<br>22 | 9<br>13  | 43                     | 0                         | 6.64<br>4.34               | 31                                | 17         | 14 | SC          | 0.80<br>1.33      | 80.2<br>31.6               | 69.4<br>26.9       |
| 150      | Unclassified | 0-6<br>6-12       | LS<br>S        | 81<br>88                         | 12<br>9  | 7<br>3   | 17                     | 0                         | 1.88<br>2.08               | 19**                              | Nonplastic |    | SM          | 1.22<br>1.44      | 36.3<br>28.6               | 24.3<br>21.9       |
| 151      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 53<br>59                         | 41<br>33 | 6<br>8   | 53                     | 0                         | 5.92<br>5.56               | 31                                | 22         | 9  | CL          | 0.96<br>1.11      | 59.2<br>48.0               | 48.7<br>37.6       |
| 152      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 70<br>58                         | 24<br>29 | 6<br>3   | 38                     | 0                         | 5.12<br>5.12               | 26**                              | Nonplastic |    | SM          | 1.14<br>1.18      | 44.5<br>43.0               | 36.8<br>33.1       |

(Continued)

\*\* Modified technique.



Table B2c (Concluded)

| Site No. | Soil Series  | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|-------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |              |                   |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Atmosphere Tension |
| 153      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 56<br>63                         | 36<br>26 | 8<br>11  | 39                      | 1                         | 6.28<br>3.62               | 27                                | 15         | 12 | SC          | 1.09<br>1.43      | 49.8<br>28.8               | 36.5<br>25.0       |
| 154      | Unclassified | 0-6<br>6-12       | LS<br>SL       | 78<br>54                         | 18<br>27 | 4<br>9   | 43                      | 2                         | 3.00<br>1.65               | 19                                | 14         | 5  | SM-SC       | 1.45<br>1.53      | 28.0<br>24.5               | 24.4<br>20.6       |
| 155      | Onamia       | 0-6<br>6-12       | SIL<br>L       | 20<br>42                         | 59<br>50 | 21<br>8  | 73                      | 15                        | 2.87<br>0.78               | 20                                | 19         | 1  | ML          | 1.30<br>1.48      | 36.1<br>25.4               | 30.5<br>23.6       |
| 156      | Milaca       | 0-6<br>6-12       | L<br>SIL       | 43<br>29                         | 49<br>59 | 8<br>12  | 82                      | 10                        | 2.87<br>0.55               | 22                                | 19         | 3  | ML          | 1.24<br>1.51      | 40.4<br>25.1               | 35.6<br>22.5       |
| 157      | Adolph       | 0-6<br>6-12       | SIL<br>SIL     | 31<br>22                         | 62<br>56 | 7<br>22  | 88                      | 1                         | 5.80<br>1.25               | 36                                | 18         | 18 | CL          | 1.16<br>1.45      | 43.0<br>27.0               | 35.5<br>23.8       |
| 158      | Greenbush    | 0-6<br>6-12       | SIL<br>SIL     | 40<br>32                         | 54<br>51 | 6<br>17  | 73                      | 15                        | 3.77<br>0.70               | 19                                | 16         | 3  | ML          | 1.38<br>1.51      | 26.5<br>24.1               | 19.3<br>19.1       |
| 159      | Milaca       | 0-6<br>6-12       | SIL<br>SIL     | 26<br>23                         | 53<br>65 | 11<br>12 | 89                      | 1                         | 6.28<br>1.65               | 26                                | 24         | 2  | ML          | 1.22<br>1.34      | 40.6<br>34.0               | 35.4<br>31.2       |
| 160      | Onamia       | 0-6<br>6-12       | SIL<br>SIL     | 34<br>34                         | 56<br>55 | 10<br>11 | 74                      | 2                         | 3.41<br>1.88               | 22                                | 20         | 2  | ML          | 1.34<br>1.56      | 32.7<br>24.5               | 27.4<br>21.6       |
| 161      | Adolph       | 0-6<br>6-12       | SIL<br>SIL     | 42<br>44                         | 51<br>50 | 7<br>6   | 68                      | 1                         | 4.15<br>1.05               | 17**                              | 16         | 1  | ML          | 1.20<br>1.45      | 41.0<br>27.7               | 34.7<br>23.2       |
| 162      | Freer        | 0-6<br>6-12       | SIL<br>SIL     | 28<br>35                         | 57<br>49 | 15<br>16 | 74                      | 1                         | 5.56<br>2.50               | 31                                | 23         | 8  | ML          | 1.15<br>1.35      | 46.9<br>33.5               | 45.0<br>31.6       |
| 163      | Milaca       | 0-6<br>6-12       | SIL<br>SIL     | 30<br>31                         | 59<br>63 | 11<br>6  | 96                      | 1                         | 3.27<br>0.55               | 21                                | 19         | 2  | ML          | 1.22<br>1.49      | 41.4<br>33.5               | 35.7<br>24.4       |
| 164      | Onamia       | 0-6<br>6-12       | SIL<br>SIL     | 25<br>20                         | 67<br>72 | 8<br>8   | 92                      | 1                         | 3.00<br>0.86               | 20**                              | Nonplastic |    | ML          | 1.22<br>1.43      | ----<br>----               | 32.0<br>27.5       |
| 165      | Onamia       | 0-6<br>6-12       | SL<br>LS       | 78<br>86                         | 15<br>11 | 7<br>3   | 20                      | 2                         | 2.87<br>0.78               | 14**                              | Nonplastic |    | SM          | 1.38<br>1.32      | 32.2<br>31.9               | 26.3<br>25.4       |
| 166      | Omega        | 0-6<br>6-12       | SL<br>SL       | 55<br>56                         | 37<br>38 | 8<br>6   | 53                      | 5                         | 2.35<br>0.70               | 15**                              | 15         | 0  | ML          | 1.47<br>1.59      | 27.9<br>22.9               | 24.9<br>20.0       |
| 167      | Cloquet      | 0-6<br>6-12       | SL<br>SL       | 67<br>72                         | 28<br>24 | 5<br>4   | 37                      | 15                        | 4.70<br>1.05               | 13**                              | Nonplastic |    | SM          | 1.30<br>1.58      | 36.5<br>23.6               | 32.2<br>19.2       |
| 168      | Unclassified | 0-6<br>6-12       | LS<br>LS       | 79<br>84                         | 17<br>13 | 4<br>3   | 18                      | 20                        | 3.13<br>1.55               | 13**                              | Nonplastic |    | SM          | 1.55<br>1.77      | 24.1<br>16.6               | 17.7<br>10.9       |
| 169      | Unclassified | 0-6<br>6-12       | SL<br>LS       | 73<br>76                         | 13<br>20 | 4<br>4   | 32                      | 10                        | 2.87<br>0.86               | 12**                              | Nonplastic |    | SM          | 1.29<br>1.48      | 36.5<br>25.8               | 28.1<br>21.8       |
| 170      | Unclassified | 0-6<br>6-12       | SIL<br>L       | 40<br>46                         | 55<br>46 | 5<br>8   | 68                      | 5                         | 5.12<br>1.65               | 18**                              | Nonplastic |    | ML          | 1.06<br>1.36      | 45.3<br>33.2               | 36.9<br>29.9       |

\*\* Modified technique.



Table B24  
Soil Properties of Strength-moisture Survey Sites  
Intermountain Region

| Site No. | Soil Series  | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |      |      | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|--------------------|----------------|----------------------------------|------|------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |              |                    |                | Sand                             | Silt | Clay |                         |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Atmosphere Tension |
| 1        | Unclassified | 0-6                | L              | 43                               | 46   | 11   | 67                      | 3                         | 5.80                       | 41                                | 28         | 13 | ML          | 0.99              | 61.9                       | 40.2               |
|          |              | 6-12               | L              | 40                               | 50   | 10   |                         |                           |                            |                                   |            |    |             | 1.18              | 45.2                       | 33.1               |
| 2        | Unclassified | 0-6                | SL             | 65                               | 26   | 9    | 63                      | 10                        | 5.56                       | 21**                              | Nonplastic |    | ML          | 1.20              | 43.8                       | 28.4               |
|          |              | 6-12               | SL             | 68                               | 23   | 9    |                         |                           |                            |                                   |            |    |             | 1.30              | 38.2                       | 24.7               |
| 3        | Unclassified | 0-6                | L              | 40                               | 50   | 10   | 67                      | 10                        | 9.00                       | 39                                | 25         | 14 | ML          | 1.23              | 42.6                       | 29.5               |
|          |              | 6-12               | L              | 40                               | 50   | 10   |                         |                           |                            |                                   |            |    |             | 1.26              | 40.6                       | 32.5               |
| 4        | Unclassified | 0-6                | L              | 41                               | 45   | 14   | 71                      | 15                        | 3.86                       | 31                                | 19         | 12 | CL          | 1.43              | 28.1                       | 24.6               |
|          |              | 6-12               | L              | 37                               | 46   | 17   |                         |                           |                            |                                   |            |    |             | 1.48              | 27.6                       | 25.3               |
| 5        | Farmington   | 0-6                | SiL            | 25*                              | 57*  | 18*  | 85*                     | 0                         | 15.00                      | 53                                | 25         | 28 | CH          | 0.78              | 90.3                       | 81.9               |
|          |              | 6-12               | SiL            | 20*                              | 57*  | 23*  |                         |                           |                            |                                   |            |    |             | 1.33              | 39.0                       | 36.8               |
| 6        | Ironton      | 0-6                | SiL            | 30                               | 52   | 18   | 74                      | 0                         | 6.04                       | 36                                | 18         | 18 | CL          | 1.29              | 38.2                       | 33.7               |
|          |              | 6-12               | L              | 39                               | 41   | 20   |                         |                           |                            |                                   |            |    |             | 1.49              | 28.6                       | 27.0               |
| 7        | Timpanogas   | 0-6                | L              | 40                               | 47   | 13   | 80                      | 0                         | 2.87                       | 25                                | 18         | 7  | CL-ML       | 1.37              | 30.6                       | 25.9               |
|          |              | 6-12               | L              | 35                               | 50   | 15   |                         |                           |                            |                                   |            |    |             | 1.44              | 28.5                       | 23.0               |
| 8        | Airport      | 0-6                | SL             | 56                               | 34   | 10   | 52                      | 0                         | 1.15                       | 30                                | 14         | 16 | CL          | 1.56              | 22.1                       | 17.1               |
|          |              | 6-12               | SL             | 56                               | 30   | 14   |                         |                           |                            |                                   |            |    |             | 1.65              | 19.7                       | 16.1               |
| 9        | Saltair      | 0-6                | SiCL           | 10                               | 62   | 28   | 8                       | 0                         | 1.33                       | 36                                | 17         | 19 | CL          | 1.27              | 38.8                       | 32.9               |
|          |              | 6-12               | SiCL           | 6                                | 59   | 35   |                         |                           |                            |                                   |            |    |             | 1.60              | 24.2                       | 22.9               |
| 10       | Terminal     | 0-6                | SiL            | 17                               | 58   | 25   | 95                      | 0                         | 2.60                       | 41                                | 16         | 25 | CL          | 1.37              | 33.4                       | 25.2               |
|          |              | 6-12               | SiCL           | 10                               | 53   | 37   |                         |                           |                            |                                   |            |    |             | 1.50              | 30.4                       | 27.4               |
| 11       | Welby        | 0-6                | L              | 52                               | 38   | 10   | 57                      | 0                         | 3.00                       | 22                                | 18         | 4  | CL-ML       | 1.54              | 26.6                       | 23.1               |
|          |              | 6-12               | SL             | 57                               | 34   | 9    |                         |                           |                            |                                   |            |    |             | 1.58              | 24.4                       | 19.8               |
| 12       | Taylorsville | 0-6                | SiL            | 21                               | 53   | 26   | 83                      | 0                         | 4.80                       | 31                                | 18         | 13 | CL          | 1.44              | 29.1                       | 25.0               |
|          |              | 6-12               | L              | 25                               | 49   | 26   |                         |                           |                            |                                   |            |    |             | 1.48              | 25.5                       | 21.3               |
| 13       | Taylorsville | 0-6                | SiL            | 25                               | 59   | 16   | 85                      | 3                         | 4.34                       | 30                                | 18         | 12 | CL          | 1.22              | 40.6                       | 30.1               |
|          |              | 6-12               | SiL            | 29                               | 51   | 20   |                         |                           |                            |                                   |            |    |             | 1.46              | 27.5                       | 23.4               |
| 14       | Taylorsville | 0-6                | SiL            | 19                               | 61   | 20   | 95                      | 0                         | 3.96                       | 33                                | 18         | 15 | CL          | 1.36              | 33.2                       | 27.9               |
|          |              | 6-12               | SiL            | 13                               | 62   | 25   |                         |                           |                            |                                   |            |    |             | 1.46              | 28.0                       | 25.6               |
| 15       | Terminal     | 0-6                | SiL            | 29                               | 54   | 17   | 75                      | 0                         | 3.62                       | 26                                | 17         | 9  | CL          | 1.38              | 32.4                       | 28.1               |
|          |              | 6-12               | L              | 39                               | 43   | 18   |                         |                           |                            |                                   |            |    |             | 1.44              | 28.9                       | 24.5               |
| 16       | Kirkham      | 0-6                | SiCL           | 17                               | 55   | 28   | 90                      | 0                         | 3.96                       | 35                                | 18         | 17 | CL          | 1.38              | 33.5                       | 28.0               |
|          |              | 6-12               | SiCL           | 16                               | 49   | 35   |                         |                           |                            |                                   |            |    |             | 1.57              | 24.6                       | 23.1               |
| 17       | Welby        | 0-6                | SiL            | 35                               | 51   | 14   | 79                      | 0                         | 3.96                       | 25                                | 17         | 8  | CL          | 1.20              | 41.4                       | 29.8               |
|          |              | 6-12               | L              | 36                               | 47   | 17   |                         |                           |                            |                                   |            |    |             | 1.42              | 29.6                       | 22.8               |
| 18       | McBeth       | 0-6                | SiL            | 30                               | 52   | 18   | 80                      | 0                         | 4.15                       | 45                                | 27         | 18 | ML          | 1.25              | 40.8                       | 33.4               |
|          |              | 6-12               | SiL            | 30                               | 53   | 17   |                         |                           |                            |                                   |            |    |             | 1.26              | 40.9                       | 33.7               |
| 19       | Welby        | 0-6                | L              | 31                               | 48   | 21   | 76                      | 17                        | 5.92                       | 40                                | 30         | 18 | ML          | 1.18              | 44.6                       | 40                 |
|          |              | 6-12               | L              | 34                               | 46   | 20   |                         |                           |                            |                                   |            |    |             | 1.17              | 45.0                       | 40.8               |
| 20       | Red Rock     | 0-6                | SL             | 59                               | 29   | 12   | 54                      | 0                         | 2.23                       | 28                                | 21         | 7  | CL-ML       | 1.65              | 20.5                       | 18.9               |
|          |              | 6-12               | SL             | 56                               | 32   | 12   |                         |                           |                            |                                   |            |    |             | 1.53              | 23.4                       | 20.3               |
| 21       | Kirkham      | 0-6                | L              | 30                               | 47   | 23   | 72                      | 0                         | 3.77                       | 26                                | 16         | 10 | CL          | 1.42              | 31.0                       | 28.8               |
|          |              | 6-12               | L              | 38                               | 40   | 22   |                         |                           |                            |                                   |            |    |             | 1.56              | 25.6                       | 24.4               |
| 22       | Trenton      | 0-6                | SiL            | 19                               | 63   | 18   | 96                      | 0                         | 6.04                       | 49                                | 27         | 22 | CL          | 0.97              | 63.0                       | 53.6               |
|          |              | 6-12               | SiL            | 10                               | 67   | 23   |                         |                           |                            |                                   |            |    |             | 1.26              | 42.2                       | 39.8               |
| 23       | Millville    | 0-6                | SiL            | 11                               | 69   | 20   | 96                      | 0                         | 4.90                       | 40                                | 24         | 16 | CL          | 1.34              | 34.8                       | 32.3               |
|          |              | 6-12               | SiL            | 13                               | 67   | 20   |                         |                           |                            |                                   |            |    |             | 1.40              | 31.6                       | 30.4               |

(Continued)

\* Adjusted value.

\*\* Modified technique.



Table B2d (Continued)

| Site No. | Soil Series | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |          |          | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|-------------|--------------------|----------------|----------------------------------|----------|----------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |             |                    |                | Sand                             | Silt     | Clay     |                         |                           |                            | LL                                | PL         | FI |             |                   | Saturation                 | Atmosphere Tension |
| 24       | Salt Lake   | 0-6<br>6-12        | SIL<br>SIL     | 20<br>19                         | 60<br>54 | 20<br>27 | 89                      | 0                         | 6.52<br>4.90               | 52                                | 35         | 17 | MH          | 1.15<br>1.08      | 48.0<br>55.1               | 41.0<br>52.2       |
| 25       | Conda       | 0-6<br>6-12        | L<br>L         | 45<br>46                         | 45<br>45 | 10<br>9  | 63                      | 3                         | 4.90<br>4.90               | 37                                | 32         | 5  | ML          | 1.13<br>1.15      | 48.0<br>47.9               | 39.8<br>41.0       |
| 26       | Churchill   | 0-6<br>6-12        | L<br>SL        | 50<br>55                         | 42<br>40 | 8<br>5   | 55                      | 0                         | 5.24<br>2.23               | 32**                              | Nonplastic |    | ML          | 0.96<br>1.18      | 64.3<br>45.2               | 54.7<br>37.2       |
| 27       | Walla Walla | 0-6<br>6-12        | SIL<br>SIL     | 20<br>14                         | 74<br>70 | 6<br>16  | 98                      | 0                         | 3.96<br>2.35               | 34                                | 21         | 13 | CL          | 1.36<br>1.42      | 33.9<br>31.1               | 31.8<br>29.5       |
| 28       | Walla Walla | 0-6<br>6-12        | SIL<br>SIL     | 16<br>14                         | 70<br>68 | 14<br>18 | 99                      | 0                         | 3.27<br>1.77               | 33                                | 20         | 13 | CL          | 1.40<br>1.38      | 32.8<br>32.6               | 30.2<br>29.2       |
| 29       | Ritzville   | 0-6<br>6-12        | SIL<br>SIL     | 24<br>20                         | 66<br>65 | 10<br>15 | 36                      | 2                         | 1.45<br>1.15               | 30                                | 20         | 10 | CL          | 1.21<br>1.40      | 41.7<br>31.5               | 33.6<br>27.7       |
| 30       | Ritzville   | 0-6<br>6-12        | SIL<br>SIL     | 20<br>20                         | 67<br>70 | 13<br>10 | 97                      | 3                         | 2.08<br>1.15               | 28                                | 20         | 8  | CL          | 1.20<br>1.31      | 41.9<br>36.0               | 35.5<br>31.2       |
| 31       | Hyrum       | 0-6<br>6-12        | SIL<br>SIL     | 26<br>25                         | 56<br>57 | 18<br>18 | 86                      | 3                         | 2.35<br>1.33               | 32                                | 18         | 14 | CL          | 1.28<br>1.50      | 37.9<br>27.0               | 31.5<br>25.0       |
| 32       | Onyx        | 0-6<br>6-12        | SIL<br>SIL     | 25<br>29                         | 64<br>61 | 11<br>10 | 93                      | 3                         | 2.08<br>1.25               | 23                                | 21         | 2  | ML          | 1.30<br>1.32      | 38.9<br>38.5               | 34.5<br>33.8       |
| 34       | Portneuf    | 0-6<br>6-12        | SIL<br>SIL     | 21<br>15                         | 70<br>76 | 9<br>9   | 37                      | 0                         | 1.45<br>1.45               | 30                                | 26         | 4  | ML          | 1.14<br>1.34      | 46.6<br>35.5               | 36.0<br>29.8       |
| 35       | Portneuf    | 0-6<br>6-12        | SIL<br>SIL     | 23<br>23                         | 62<br>67 | 10<br>10 | 95                      | 0                         | 1.65<br>1.05               | 24                                | 22         | 2  | ML          | 1.28<br>1.18      | 39.7<br>46.8               | 32.9<br>40.0       |
| 36       | Bannock     | 0-6<br>6-12        | SIL<br>SIL     | 15<br>21                         | 70<br>68 | 15<br>11 | 94                      | 0                         | 1.65<br>0.86               | 26                                | 21         | 5  | CL-ML       | 1.57<br>1.56      | 25.9<br>25.8               | 22.5<br>23.4       |
| 37       | Declo       | 0-6<br>6-12        | L<br>SIL       | 42<br>30                         | 48<br>57 | 10<br>13 | 81                      | 0                         | 1.45<br>1.05               | 26                                | 19         | 7  | CL-ML       | 1.41<br>1.32      | 31.0<br>37.8               | 27.6<br>32.3       |
| 38       | Declo       | 0-6<br>6-12        | SIL<br>SIL     | 28<br>29                         | 59<br>61 | 13<br>10 | 87                      | 0                         | 1.65<br>1.45               | 29                                | 19         | 10 | CL          | 1.43<br>1.54      | 31.2<br>26.1               | 27.6<br>23.8       |
| 39       | Sage Moor   | 0-6<br>6-12        | SIL<br>SIL     | 28<br>22                         | 58<br>62 | 14<br>16 | 92                      | 0                         | 2.47<br>0.86               | 32                                | 20         | 12 | CL          | 1.48<br>1.50      | 28.8<br>28.0               | 26.4<br>25.1       |
| 40       | Sage Moor   | 0-6<br>6-12        | L<br>L         | 42<br>50                         | 43<br>40 | 15<br>10 | 70                      | 0                         | 1.05<br>0.55               | 23                                | 20         | 3  | ML          | 1.53<br>1.53      | 28.0<br>27.6               | 24.4<br>22.9       |
| 41       | Fingal      | 0-6<br>6-12        | SL<br>SL       | 56<br>63                         | 34<br>28 | 10<br>9  | 48                      | 0                         | 1.15<br>0.46               | 15**                              | Nonplastic |    | SM          | 1.62<br>1.70      | 21.5<br>20.2               | 18.5<br>16.8       |
| 42       | Sage Moor   | 0-6<br>6-12        | SIL<br>SIL     | 31<br>20                         | 55<br>63 | 14<br>17 | 91                      | 0                         | 2.47<br>1.33               | 40                                | 22         | 18 | CL          | 1.31<br>1.31      | 36.7<br>37.1               | 32.4<br>31.9       |
| 43       | Fingal      | 0-6<br>6-12        | LS<br>LS       | 80<br>82                         | 12<br>11 | 8<br>7   | 34                      | 0                         | 0.70<br>0.70               | 17**                              | Nonplastic |    | SM          | 1.46<br>1.64      | 30.5<br>21.3               | 15.9<br>17.4       |
| 44       | Blackfoot   | 0-6<br>6-12        | LS<br>S        | 86<br>93                         | 6<br>4   | 8<br>3   | 12                      | 0                         | 0.95<br>0.78               | 18**                              | Nonplastic |    | SM          | 1.41<br>1.60      | 33.4<br>22.9               | 28.3<br>15.9       |
| 45       | Bannock     | 0-6<br>6-12        | L<br>SIL       | 40<br>39                         | 50<br>52 | 10<br>9  | 78                      | 0                         | 2.47<br>1.15               | 22                                | 19         | 3  | ML          | 1.44<br>1.60      | 29.6<br>23.6               | 25.6<br>20.7       |
| 46       | Beverly     | 0-6<br>6-12        | L<br>SL        | 44<br>58                         | 44<br>32 | 12<br>10 | 58                      | 0                         | 1.77<br>0.86               | 21                                | 18         | 3  | ML          | 1.42<br>1.60      | 30.5<br>23.2               | 27.6<br>21.3       |
| 47       | Bannock     | 0-6<br>6-12        | SIL<br>SIL     | 35<br>36                         | 50<br>53 | 15<br>11 | 82                      | 0                         | 1.33<br>0.86               | 24                                | 18         | 6  | CL-ML       | 1.54<br>1.68      | 25.4<br>21.0               | 22.6<br>19.3       |
| 48       | Paul        | 0-6<br>6-12        | SIL<br>SIL     | 20<br>21                         | 65<br>62 | 15<br>17 | 90                      | 0                         | 1.13<br>1.98               | 34                                | 19         | 15 | CL          | 1.36<br>1.38      | 35.0<br>35.3               | 26.7<br>28.9       |

(Continued)

\*\* Modified technique.



Table B2d (Continued)

| Site No. | Soil Series  | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |            | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|--------------------|----------------|----------------------------------|------------|------------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |              |                    |                | Sand                             | Silt       | Clay       |                         |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Atmosphere Tension |
| 49       | Bannock      | 0-6<br>6-12        | SL<br>SL       | 56<br>64                         | 34<br>27   | 10<br>9    | 50                      | 0                         | 1.25<br>0.78               | 34                                | 19         | 15 | CL          | 1.47<br>1.56      | 28.0<br>21.4               | 22.5<br>20.8       |
| 50       | Portneuf     | 0-6<br>6-12        | SIL<br>SIL     | 33<br>27                         | 59<br>65   | 8<br>8     | 94                      | 0                         | 1.25<br>0.78               | 24                                | 22         | 2  | ML          | 1.48<br>1.47      | 32.2<br>31.9               | 28.0<br>28.0       |
| 51       | Portneuf     | 0-6<br>6-12        | SIL<br>SIL     | 25<br>19                         | 65<br>76   | 10<br>5    | 97                      | 0                         | 1.77<br>1.15               | 31                                | 23         | 8  | ML          | 1.43<br>1.32      | 34.3<br>39.8               | 29.5<br>35.2       |
| 52       | Portneuf     | 0-6<br>6-12        | SIL<br>SIL     | 25<br>30                         | 60<br>57   | 15<br>13   | 89                      | 1                         | 2.60<br>1.33               | 34                                | 21         | 13 | CL          | 1.32<br>1.38      | 37.2<br>35.6               | 29.8<br>31.2       |
| 53       | Portneuf     | 0-6<br>6-12        | L<br>SIL       | 37<br>25                         | 48<br>55   | 15<br>20   | 91                      | 5                         | 1.65<br>1.25               | 34                                | 20         | 14 | CL          | 1.38<br>1.37      | 34.5<br>34.5               | 28.4<br>29.5       |
| 54       | Unclassified | 0-6<br>6-12        | SIL<br>SIL     | 34<br>35                         | 53<br>55   | 13<br>10   | 84                      | 0                         | 2.08<br>1.45               | 24                                | 21         | 3  | ML          | 1.26<br>1.26      | 40.3<br>39.8               | 35.6<br>34.4       |
| 55       | Unclassified | 0-6<br>6-12        | SIL<br>SIL     | 35<br>35                         | 51<br>57   | 14<br>8    | 84                      | 0                         | 2.60<br>1.33               | 27                                | 25         | 2  | ML          | 1.37<br>1.41      | 33.8<br>32.9               | 29.5<br>28.4       |
| 56       | Unclassified | 0-6<br>6-12        | SIL<br>SIL     | 18<br>20                         | 63<br>62   | 19<br>18   | 91                      | 0                         | 5.24<br>2.60               | 45                                | 26         | 19 | CL          | 1.22<br>1.28      | 43.4<br>40.6               | 38.4<br>36.9       |
| 57       | Unclassified | 0-6<br>6-12        | SL<br>SL       | 56<br>64                         | 36<br>23   | 8<br>13    | 46                      | 3                         | 0.78<br>0.78               | 22                                | 18         | 4  | SC          | 1.59<br>1.59      | 23.1<br>23.2               | 19.0<br>19.4       |
| 58       | Unclassified | 0-6<br>6-12        | L<br>L         | 40<br>41                         | 50<br>48   | 10<br>11   | 73                      | 0                         | 6.04<br>3.96               | 36                                | 31         | 5  | ML          | 1.11<br>1.13      | 44.9<br>47.4               | 38.0<br>41.7       |
| 59       | Unclassified | 0-6<br>6-12        | L<br>L         | 41<br>41                         | 46<br>44   | 13<br>15   | 70                      | 5                         | 3.27<br>1.15               | 29                                | 18         | 11 | CL          | 1.42<br>1.58      | 31.1<br>24.9               | 26.5<br>22.6       |
| 60       | Unclassified | 0-6<br>6-12        | SIL<br>SIL     | 34*<br>28*                       | 55*<br>57* | 11*<br>15* | 80*                     | 3                         | 11.36<br>6.40              | 62                                | 49         | 13 | ME          | 0.92<br>0.82      | 68.3<br>81.5               | 59.9<br>76.8       |
| 61       | Gooding      | 0-6<br>6-12        | L<br>L         | 47<br>50                         | 37<br>39   | 16<br>11   | 62                      | 1                         | 2.08<br>1.65               | 25                                | 15         | 10 | CL          | 1.56<br>1.72      | 25.4<br>19.8               | 20.4<br>17.2       |
| 62       | Gooding      | 0-6<br>6-12        | LS<br>S        | 88<br>97                         | 4<br>1     | 8<br>2     | 8                       | 0                         | 0.70<br>0.32               | 23**                              | Nonplastic |    | SM          | 1.52<br>1.52      | 25.8<br>25.8               | 11.0<br>10.1       |
| 63       | Portneuf     | 0-6<br>6-12        | L<br>SIL       | 40<br>35                         | 47<br>50   | 13<br>15   | 87                      | 0                         | 1.77<br>0.78               | 28                                | 19         | 9  | CL          | 1.47<br>1.55      | 38.9<br>29.3               | 32.3<br>25.4       |
| 64       | Portneuf     | 0-6<br>6-12        | L<br>SIL       | 52<br>42                         | 41<br>50   | 7<br>8     | 79                      | 0                         | 1.05<br>0.70               | 22                                | 21         | 1  | ML          | 1.42<br>1.38      | 32.8<br>35.7               | 28.5<br>31.0       |
| 65       | Minidoka     | 0-6<br>6-12        | L<br>L         | 50<br>47                         | 40<br>45   | 10<br>8    | 80                      | 0                         | 1.65<br>1.25               | 28                                | 21         | 7  | CL-ML       | 1.47<br>1.44      | 28.4<br>30.5               | 24.2<br>26.7       |
| 66       | Portneuf     | 0-6<br>6-12        | SIL<br>SIL     | 40<br>35                         | 51<br>51   | 9<br>14    | 88                      | 1                         | 1.25<br>0.70               | 26                                | 18         | 8  | CL          | 1.37<br>1.38      | 32.6<br>33.9               | 26.5<br>26.1       |
| 67       | Chilcote     | 0-6<br>6-12        | SIL<br>SIL     | 21<br>20                         | 60<br>57   | 19<br>23   | 93                      | 0                         | 1.77<br>1.55               | 47                                | 24         | 23 | CL          | 1.36<br>1.28      | 33.8<br>39.2               | 26.9<br>31.5       |
| 68       | Power        | 0-6<br>6-12        | SIL<br>SIL     | 31<br>27                         | 55<br>53   | 14<br>20   | 87                      | 8                         | 1.77<br>1.55               | 35                                | 20         | 15 | CL          | 1.40<br>1.32      | 32.1<br>38.8               | 26.7<br>29.0       |
| 69       | Unclassified | 0-6<br>6-12        | L<br>L         | 50<br>50                         | 41<br>42   | 9<br>8     | 63                      | 1                         | 2.23<br>1.15               | 26                                | 20         | 6  | CL-ML       | 1.43<br>1.40      | 29.2<br>30.8               | 23.7<br>25.2       |
| 70       | Kilmerque    | 0-6<br>6-12        | SL<br>SL       | 54<br>56                         | 36<br>32   | 10<br>12   | 52                      | 8                         | 3.27<br>1.05               | 16                                | 14         | 2  | ML          | 1.61<br>1.79      | 21.7<br>16.2               | 18.4<br>14.7       |
| 71       | Moscow       | 0-6<br>6-12        | SL<br>SL       | 70<br>75                         | 22<br>18   | 8<br>7     | 31                      | 8                         | 2.23<br>0.38               | 15**                              | Nonplastic |    | SM          | 1.62<br>1.66      | 18.9<br>24.0               | 14.5<br>12.4       |
| 72       | Sweet        | 0-6<br>6-12        | SL<br>SL       | 54<br>60                         | 35<br>29   | 11<br>11   | 46                      | 5                         | 3.00<br>1.45               | 28                                | 20         | 8  | SC          | 1.56<br>1.56      | 23.3<br>23.9               | 18.5<br>17.5       |

(Continued)

\* Adjusted value.

\*\* Modified technique.



Table B2d (Continued)

| Site No. | Soil Series  | Depths Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |            | USCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | USCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|--------------------|----------------|----------------------------------|------------|------------|-------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|-------------|-------------------|----------------------------|--------------------|
|          |              |                    |                | Sand                             | Silt       | Clay       |                         |                           |                            | LL                                | PL         | PI |             |                   | Saturation                 | Atmosphere Tension |
| 73       | Sweet        | 0-6<br>6-12        | L<br>SL        | 51<br>57                         | 38<br>32   | 11<br>11   | 50                      | 1                         | 3.27<br>2.47               | 23                                | 15         | 8  | CL          | 1.55<br>1.54      | 24.0<br>25.2               | 20.0<br>20.0       |
| 74       | Unclassified | 0-6<br>6-12        | SIL<br>SIL     | 19<br>19                         | 68<br>71   | 13<br>10   | 73                      | 0                         | 3.41<br>2.60               | 39                                | 27         | 12 | ML          | 1.11<br>1.08      | 50.0<br>51.4               | 41.8<br>44.6       |
| 75       | Chilcott     | 0-6<br>6-12        | SIL<br>SIL     | 25<br>19                         | 64<br>70   | 11<br>11   | 94                      | 0                         | 1.77<br>0.95               | 28                                | 20         | 8  | CL          | 1.39<br>1.41      | 30.7<br>31.4               | 25.1<br>27.8       |
| 76       | Falk         | 0-6<br>6-12        | SIL<br>SIL     | 30<br>35                         | 58<br>53   | 12<br>12   | 78                      | 3                         | 2.75<br>1.33               | 25                                | 20         | 5  | CL-ML       | 1.36<br>1.52      | 36.1<br>27.0               | 30.9<br>24.6       |
| 77       | Unclassified | 0-6<br>6-12        | SL<br>SL       | 68<br>69                         | 24<br>26   | 8<br>5     | 35                      | 1                         | 3.96<br>2.08               | 28**                              | Nonplastic |    | SM          | 1.07<br>1.16      | 52.4<br>44.9               | 44.8<br>39.6       |
| 78       | Portneuf     | 0-6<br>6-12        | SL<br>SL       | 63<br>67                         | 27<br>23   | 10<br>10   | 47                      | 3                         | 1.05<br>0.86               | 21                                | 17         | 4  | SM-SC       | 1.65<br>1.73      | 20.4<br>18.5               | 17.4<br>16.6       |
| 79       | Portneuf     | 0-6<br>6-12        | SL<br>SCL      | 55<br>65                         | 34<br>25   | 11<br>10   | 58                      | 0                         | 1.05<br>0.55               | 22                                | 19         | 3  | ML          | 1.54<br>1.68      | 24.7<br>21.0               | 21.7<br>18.9       |
| 80       | Portneuf     | 0-6<br>6-12        | SIL<br>SIL     | 36<br>32                         | 51<br>58   | 13<br>10   | 92                      | 0                         | 1.15<br>0.70               | 25                                | 20         | 5  | CL-ML       | 1.48<br>1.56      | 28.9<br>26.3               | 25.6<br>24.1       |
| 81       | Minidoka     | 0-6<br>6-12        | SIL<br>SIL     | 28<br>26                         | 58<br>60   | 14<br>14   | 92                      | 0                         | 1.88<br>1.55               | 29                                | 20         | 9  | CL          | 1.19<br>1.31      | 44.7<br>34.9               | 32.4<br>27.5       |
| 82       | Portneuf     | 0-6<br>6-12        | SIL<br>SIL     | 21<br>16                         | 66<br>72   | 13<br>12   | 96                      | 0                         | 2.47<br>1.98               | 33                                | 21         | 12 | CL          | 1.36<br>1.45      | 35.5<br>30.9               | 31.7<br>29.3       |
| 83       | Paul         | 0-6<br>6-12        | SIL<br>SIL     | 37<br>29                         | 53<br>51   | 10<br>20   | 84                      | 0                         | 1.88<br>1.25               | 32                                | 17         | 15 | CL          | 1.49<br>1.56      | 27.6<br>25.0               | 23.6<br>22.9       |
| 84       | Rupert       | 0-6<br>6-12        | SL<br>SL       | 59<br>67                         | 32<br>26   | 9<br>7     | 42                      | 0                         | 1.15<br>0.78               | 15                                | 13         | 2  | SM          | 1.59<br>1.69      | 23.0<br>19.9               | 16.5<br>14.8       |
| 85       | Paul         | 0-6<br>6-12        | S<br>S         | 92<br>93                         | 2<br>3     | 6<br>4     | 8                       | 0                         | 0.62<br>0.25               | 21**                              | Nonplastic |    | SM          | 1.56<br>1.57      | 23.4<br>22.5               | 11.4<br>9.4        |
| 86       | Goose Creek  | 0-6<br>6-12        | SIL<br>SIL     | 35<br>30                         | 52<br>55   | 13<br>15   | 83                      | 0                         | 2.47<br>2.47               | 38                                | 24         | 14 | CL          | 1.09<br>1.22      | 50.0<br>41.8               | 37.8<br>34.5       |
| 87       | View         | 0-6<br>6-12        | SL<br>SL       | 55<br>65                         | 33<br>28   | 12<br>7    | 46                      | 0                         | 2.08<br>0.78               | 22**                              | Nonplastic |    | SM          | 1.36<br>1.37      | 29.7<br>28.4               | 24.1<br>21.9       |
| 88       | Moscow       | 0-6<br>6-12        | SL<br>SL       | 65<br>68                         | 26<br>25   | 9<br>7     | 39                      | 5                         | 2.47<br>0.62               | 18**                              | Nonplastic |    | SM          | 1.34<br>1.52      | 34.8<br>26.9               | 23.9<br>17.0       |
| 89       | Unclassified | 0-6<br>6-12        | L<br>L         | 38<br>36                         | 49<br>49   | 13<br>15   | 73                      | 1                         | 4.70<br>3.69               | 36                                | 22         | 14 | CL          | 1.28<br>1.24      | 37.8<br>40.2               | 34.3<br>35.8       |
| 90       | Unclassified | 0-6<br>6-12        | SIL<br>SIL     | 29*<br>22*                       | 59*<br>60* | 12*<br>18* | 85*                     | 1                         | 6.04<br>4.05               | 40                                | 28         | 12 | ML          | 0.97<br>1.15      | 64.4<br>47.9               | 50.0<br>40.0       |
| 91       | Unclassified | 0-6<br>6-12        | SIL<br>SIL     | 39<br>37                         | 50<br>52   | 11<br>11   | 72                      | 8                         | 5.34<br>3.54               | 36                                | 27         | 9  | ML          | 1.08<br>1.30      | 55.0<br>40.0               | 44.4<br>35.8       |
| 92       | Unclassified | 0-6<br>6-12        | SIL<br>SIL     | 14<br>16                         | 67<br>68   | 19<br>16   | 92                      | 0                         | 4.52<br>3.69               | 42                                | 25         | 17 | CL          | 1.02<br>1.08      | 57.9<br>53.0               | 43.0<br>38.0       |
| 93       | Unclassified | 0-6<br>6-12        | SIL<br>SICL    | 27<br>13                         | 55<br>60   | 18<br>27   | 91                      | 0                         | 5.68<br>3.41               | 55                                | 32         | 23 | ME          | 0.92<br>1.00      | 65.9<br>59.7               | 45.1<br>40.8       |
| 94       | Unclassified | 0-6<br>6-12        | SIL<br>SICL    | 20<br>20                         | 55<br>52   | 25<br>28   | 89                      | 3                         | 4.52<br>4.05               | 56                                | 26         | 30 | CH          | 1.22<br>1.31      | 44.7<br>39.7               | 40.0<br>38.4       |
| 95       | Unclassified | 0-6<br>6-12        | L<br>CL        | 29*<br>26*                       | 46*<br>45* | 25*<br>29* | 80*                     | 0                         | 5.92<br>5.80               | 59                                | 32         | 27 | ME          | 1.01<br>1.22      | 58.1<br>42.6               | 50.2<br>41.2       |
| 96       | Unclassified | 0-6<br>6-12        | CL<br>CL       | 22<br>25                         | 46<br>45   | 32<br>30   | 84                      | 1                         | 3.62<br>3.62               | 49                                | 23         | 26 | CL          | 1.28<br>1.41      | 40.6<br>31.8               | 33.3<br>30.9       |

(Continued)

\* Adjusted value.

\*\* Modified technique.



Table B2d (Continued)

| Site No. | Soil Series  | Depth Sampled in. | Texture Class. | Mechanical Analysis by Weight, % |            |            | UCS Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constants by Weight, % |            |    | UCS Class. | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|-------------------|----------------|----------------------------------|------------|------------|------------------------|---------------------------|----------------------------|-----------------------------------|------------|----|------------|-------------------|----------------------------|--------------------|
|          |              |                   |                | Sand                             | Silt       | Clay       |                        |                           |                            | LL                                | PL         | PT |            |                   | Saturation                 | Atmosphere Tension |
| 97       | Unclassified | 0-6<br>6-12       | SL<br>L        | 25<br>30                         | 53<br>48   | 22<br>22   | 81                     | 3                         | 2.35<br>1.45               | 31                                | 18         | 13 | CL         | 1.39<br>1.48      | 32.0<br>27.4               | 25.6<br>22.0       |
| 98       | Unclassified | 0-6<br>6-12       | CL<br>CL       | 23*<br>23*                       | 46*<br>45* | 31*<br>32* | 85*                    | 0                         | 6.52<br>2.75               | 50                                | 23         | 27 | CL         | 1.21<br>1.38      | 45.4<br>34.4               | 39.7<br>33.6       |
| 99       | Billings     | 0-6<br>6-12       | SLCL<br>SLCL   | 14<br>16                         | 58<br>51   | 28<br>33   | 92                     | 0                         | 1.88<br>1.65               | 33                                | 19         | 14 | CL         | 1.29<br>1.53      | 38.2<br>26.2               | 27.2<br>22.4       |
| 100      | Redfield     | 0-6<br>6-12       | SLCL<br>SLCL   | 8<br>13                          | 61<br>57   | 31<br>30   | 92                     | 0                         | 3.13<br>1.45               | 42                                | 25         | 17 | CL         | 1.26<br>1.37      | 42.1<br>35.5               | 38.1<br>33.8       |
| 101      | Redfield     | 0-6<br>6-12       | CL<br>CL       | 38*<br>20*                       | 28*<br>45* | 34*<br>35* | 85*                    | 0                         | 5.80<br>1.45               | 58                                | 24         | 34 | CH         | 1.16<br>1.42      | 50.4<br>33.2               | 46.2<br>33.0       |
| 102      | Palasade     | 0-6<br>6-12       | SL<br>SL       | 57<br>56                         | 27<br>24   | 16<br>20   | 53                     | 0                         | 1.77<br>1.15               | 34                                | 17         | 17 | CL         | 1.41<br>1.42      | 31.9<br>31.0               | 29.3<br>27.9       |
| 103      | Unclassified | 0-6<br>6-12       | L<br>L         | 28*<br>34*                       | 45*<br>46* | 27*<br>20* | 75*                    | 0                         | 2.87<br>2.35               | 54                                | 29         | 25 | CH         | 1.04<br>1.16      | 54.3<br>49.7               | 49.7<br>47.4       |
| 104      | Musinia      | 0-6<br>6-12       | SL<br>SL       | 53<br>56                         | 32<br>33   | 15<br>11   | 55                     | 0                         | 1.25<br>0.55               | 24                                | 19         | 5  | CL-ML      | 1.60<br>1.64      | 23.6<br>23.9               | 20.9<br>22.0       |
| 105      | Redfield     | 0-6<br>6-12       | CL<br>L        | 27<br>39                         | 45<br>39   | 28<br>22   | 68                     | 3                         | 4.15<br>1.77               | 37                                | 18         | 19 | CL         | 1.23<br>1.53      | 44.7<br>26.6               | 40.7<br>25.9       |
| 106      | Redfield     | 0-6<br>6-12       | L<br>L         | 36<br>43                         | 40<br>33   | 24<br>24   | 68                     | 0                         | 3.54<br>1.05               | 35                                | 16         | 19 | CL         | 1.43<br>1.66      | 29.7<br>20.2               | 27.2<br>19.4       |
| 107      | Redfield     | 0-6<br>6-12       | L<br>L         | 38<br>45                         | 39<br>35   | 23<br>20   | 63                     | 0                         | 2.60<br>1.88               | 30                                | 15         | 15 | CL         | 1.55<br>1.57      | 25.5<br>23.5               | 22.4<br>19.7       |
| 108      | LaVerkin     | 0-6<br>6-12       | SLCL<br>CL     | 13<br>35                         | 53<br>36   | 34<br>29   | 76                     | 0                         | 4.90<br>1.25               | 33                                | 16         | 17 | CL         | 1.31<br>1.45      | 39.1<br>30.2               | 31.7<br>27.0       |
| 109      | Redfield     | 0-6<br>6-12       | CL<br>L        | 29<br>47                         | 38<br>42   | 33*<br>11  | 72                     | 0                         | 3.00<br>0.95               | 29                                | 17         | 12 | CL         | 1.54††<br>1.70††  | 29.5<br>22.2               | 27.6<br>21.7       |
| 110      | Bracken      | 0-6<br>6-12       | LS<br>LS       | 80<br>85                         | 12<br>10   | 8<br>5     | 30                     | 0                         | 0.55<br>0.55               | 17**                              | Nonplastic |    | SM         | 1.58<br>1.56      | 23.9<br>24.6               | 19.9<br>20.1       |
| 111      | Gila         | 0-6<br>6-12       | SL<br>SL       | 31<br>70                         | 57<br>26   | 12<br>4    | 48                     | 0                         | 1.05<br>0.70               | 22**                              | Nonplastic |    | SM         | 1.54<br>1.47      | 24.9<br>28.8               | 18.2<br>21.0       |
| 112      | Gila         | 0-6<br>6-12       | L<br>SL        | 41<br>78                         | 42<br>15   | 17**<br>7  | 29                     | 0                         | 2.35<br>0.46               | 20**                              | Nonplastic |    | SM         | 1.36<br>1.54      | 34.2<br>25.1               | 29.4<br>22.3       |
| 113      | Saint George | 0-6<br>6-12       | LS<br>S        | 88<br>89                         | 6<br>6     | 6<br>5     | 20                     | 0                         | 0.55<br>0.55               | 17**                              | Nonplastic |    | SM         | 1.60<br>1.62      | 23.3<br>22.0               | 15.1<br>13.2       |
| 114      | Tobler       | 0-6<br>6-12       | S<br>S         | 89<br>90                         | 3<br>6     | 8<br>4     | 15                     | 0                         | 0.32<br>0.18               | 16**                              | Nonplastic |    | SM         | 1.60<br>1.69      | 21.8<br>20.5               | 8.8<br>11.6        |
| 115      | Musinia      | 0-6<br>6-12       | L<br>SL        | 50<br>70                         | 40<br>23   | 10<br>7    | 42                     | 0                         | 1.88<br>0.62               | 23**                              | Nonplastic |    | SM         | 1.37<br>1.50      | 32.1<br>27.7               | 29.3<br>25.7       |
| 116      | Tabiona      | 0-6<br>6-12       | L<br>L         | 42<br>46                         | 45<br>39   | 14<br>15   | 70                     | 0                         | 3.00<br>2.35               | 27                                | 17         | 10 | CL         | 1.46<br>1.52      | 29.2<br>26.4               | 26.5<br>23.2       |
| 117      | Tabiona      | 0-6<br>6-12       | SL<br>SL       | 60<br>67                         | 29<br>27   | 11<br>6    | 46                     | 3                         | 1.65<br>0.95               | 19**                              | Nonplastic |    | SM         | 1.52<br>1.55      | 25.1<br>24.6               | 21.9<br>21.0       |
| 118      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 33<br>20                         | 52<br>55   | 15<br>25   | 88                     | 0                         | 3.02<br>2.35               | 42                                | 28         | 14 | ML         | 1.08<br>1.08      | 52.8<br>52.4               | 41.4<br>43.7       |
| 119      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 12<br>20                         | 68<br>54   | 20<br>26   | 88                     | 0                         | 2.00<br>1.6                | 24                                | 22         | 12 | CL         | 1.38<br>1.18      | 32.8<br>45.8               | 17.1<br>39.2       |
| 120      | Unclassified | 0-6<br>6-12       | SL<br>C        | 8<br>15                          | 50<br>39   | 42<br>46   | 91                     | 0                         | 3.13<br>1.65               | 34                                | 18         | 16 | CL         | 1.41<br>1.69      | 31.2<br>21.4               | 24.8<br>19.9       |

(Continued)

\* Adjusted value.    \*\* Modified technique.    †† Bulk density and moisture content values questionable.  
 ‡ 1% soluble salts washed out before testing.    ‡‡ 10% soluble salts washed out before testing.



Table B2d (Concluded)

| Site No. | Soil Series  | Depth Sampled ft. | Texture Class. | Mechanical Analysis by Weight, % |          |          | U.C.S. Fines < 0.075 mm % | Stone Content by Volume % | Organic Matter by Weight % | Plasticity Constant by Weight, % |            |    | USCS Class.  | Bulk Density g/cc | Soil Moisture by Weight, % |                    |
|----------|--------------|-------------------|----------------|----------------------------------|----------|----------|---------------------------|---------------------------|----------------------------|----------------------------------|------------|----|--------------|-------------------|----------------------------|--------------------|
|          |              |                   |                | Sand                             | Silt     | Clay     |                           |                           |                            | LL                               | PL         | PI |              |                   | Saturation                 | Atmosphere Tension |
|          |              |                   |                |                                  |          |          |                           |                           |                            |                                  |            |    |              |                   |                            |                    |
| 121      | Hayfield     | 0-6<br>6-12       | SL<br>SL       | 52<br>56                         | 35<br>24 | 13<br>10 | 49                        | 0                         | 2.23<br>0.70               | 18**                             | Nonplastic | SM | 1.48<br>1.42 | 28.5<br>21.8      | 22.5<br>23.6               |                    |
| 122      | Hayfield     | 0-6<br>6-12       | SIL<br>SIL     | 54<br>59                         | 37<br>30 | 9<br>11  | 81                        | 0                         | 1.65<br>0.95               | 21                               | 16         | 5  | CL-ML        | 1.48<br>1.42      | 30.3<br>31.3               | 24.2<br>23.8       |
| 123      | Eller        | 0-6<br>6-12       | L<br>SIL       | 44<br>28                         | 41<br>54 | 15<br>18 | 81                        | 2                         | 1.55<br>1.33               | 25                               | 17         | 8  | CL           | 1.52<br>1.47      | 26.7<br>28.0               | 21.8<br>23.0       |
| 124      | Unclassified | 0-6<br>6-12       | SiCL<br>SiCL   | 13<br>17                         | 66<br>53 | 31<br>34 | 93                        | 0                         | 5.24<br>3.13               | 50                               | 24         | 26 | CL           | 1.23<br>1.40      | 43.8<br>34.5               | 41.8<br>33.4       |
| 125      | Willard      | 0-6<br>6-12       | SL<br>SL       | 74<br>73                         | 19<br>20 | 7<br>7   | 41                        | 3                         | 0.55<br>0.55               | 14**                             | Nonplastic | SM | 1.73<br>1.56 | 19.8<br>24.6      | 14.8<br>17.2               |                    |
| 126      | Unclassified | 0-6<br>6-12       | S<br>S         | 89<br>92                         | 5<br>4   | 6<br>4   | 15                        | 1                         | 0.32<br>0.38               | 18**                             | Nonplastic | SM | 1.46<br>1.52 | 28.5<br>25.1      | 11.1<br>12.0               |                    |
| 127      | Unclassified | 0-6<br>6-12       | SL<br>LS       | 74<br>77                         | 18<br>17 | 8<br>6   | 50                        | 5                         | 0.55<br>0.55               | 20**                             | Nonplastic | SM | 1.40<br>1.44 | 29.4<br>28.6      | 17.2<br>21.2               |                    |
| 128      | Unclassified | 0-6<br>6-12       | SiCL<br>L      | 8<br>17                          | 65<br>55 | 37<br>18 | 93                        | 0                         | 2.35<br>1.45               | 34                               | 24         | 10 | ML           | 1.24<br>1.25      | 41.5<br>43.4               | 33.7<br>35.0       |
| 129      | Unclassified | 0-6<br>6-12       | L<br>L         | 50<br>41                         | 37<br>45 | 13<br>14 | 71                        | 0                         | 1.33<br>1.53               | 21                               | 17         | 4  | CL-ML        | 1.34<br>1.30      | 35.4<br>34.0               | 25.0<br>23.0       |
| 130      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 63<br>62                         | 27<br>27 | 10<br>11 | 47                        | 5                         | 1.15<br>0.95               | 16**                             | Nonplastic | SC | 1.62<br>1.59 | 22.1<br>23.9      | 15.4<br>16.7               |                    |
| 131      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 54<br>52                         | 34<br>31 | 12<br>7  | 48                        | 5                         | 1.05<br>1.05               | 15**                             | Nonplastic | SM | 1.52<br>1.56 | 26.6<br>25.8      | 19.6<br>19.6               |                    |
| 132      | Unclassified | 0-6<br>6-12       | SIL<br>SIL     | 27<br>34                         | 54<br>50 | 19<br>19 | 85                        | 0                         | 2.20<br>1.05               | 27                               | 17         | 8  | CL           | 1.12<br>1.28      | 48.9<br>36.7               | 39.2<br>33.2       |
| 133      | Unclassified | 0-6<br>6-12       | SIL<br>SIL     | 34<br>37                         | 52<br>52 | 14<br>11 | 72                        | 3                         | 6.76<br>4.90               | 45                               | 35         | 10 | ML           | 1.44**<br>1.24**  | 52.3<br>43.7               | 48.0<br>41.0       |
| 134      | Unclassified | 0-6<br>6-12       | L<br>L         | 36<br>40                         | 49<br>43 | 15<br>17 | 75                        | 3                         | 2.47<br>1.05               | 25                               | 17         | 8  | CL           | 1.27<br>1.28      | 17.3<br>17.0               | 28.9<br>29.4       |
| 135      | Unclassified | 0-6<br>6-12       | L<br>CL        | 36<br>45                         | 39<br>27 | 25<br>28 | 60                        | 3                         | 1.25<br>0.13               | 44                               | 22         | 22 | CL           | 1.35<br>1.32      | 37.3<br>34.0               | 32.5<br>22.2       |
| 136      | Unclassified | 0-6<br>6-12       | L<br>L         | 45<br>45                         | 41<br>42 | 14<br>13 | 67                        | 0                         | 1.45<br>1.05               | 30                               | 17         | 13 | CL           | 1.37<br>1.44      | 32.8<br>30.9               | 24.9<br>27.6       |
| 137      | Unclassified | 0-6<br>6-12       | L<br>SIL       | 42<br>34                         | 46<br>58 | 12<br>8  | 74                        | 0                         | 2.87<br>1.88               | 35                               | 24         | 11 | CL           | 1.32<br>1.48      | 34.0<br>27.8               | 28.9<br>23.6       |
| 138      | Unclassified | 0-6<br>6-12       | SL<br>SL       | 62<br>68                         | 28<br>20 | 10<br>12 | 36                        | 3                         | 0.86<br>0.78               | 16**                             | Nonplastic | SC | 1.46<br>1.51 | 30.6<br>28.2      | 14.1<br>13.8               |                    |
| 139      | Unclassified | 0-6<br>6-12       | SIL<br>SIL     | 20<br>15                         | 65<br>72 | 15<br>12 | 94                        | 0                         | 6.52<br>5.30               | 48                               | 30         | 18 | ML           | 1.08<br>1.08      | 48.3<br>51.3               | 41.9<br>44.5       |
| 140      | Unclassified | 0-6<br>6-12       | SIL<br>L       | 37<br>40                         | 52<br>50 | 11<br>10 | 69                        | 8                         | 2.35<br>1.77               | 20                               | 17         | 3  | ML           | 1.48<br>1.63      | 28.4<br>22.4               | 20.8<br>17.4       |
| 141      | Saltair      | 0-6<br>6-12       | SIL<br>CL      | 32<br>42                         | 53<br>33 | 15<br>35 | 61                        | 0                         | 1.58<br>1.25               | 30                               | 19         | 11 | CL           | 1.42<br>1.53      | 35.4<br>29.4               | 34.9<br>28.1       |
| 142      | Saltair      | 0-6<br>6-12       | SiCL<br>C      | 6<br>29                          | 57<br>26 | 35<br>45 | 72                        | 0                         | 1.33<br>1.33               | 34                               | 21         | 13 | CL           | 1.41<br>1.54      | 33.1<br>28.8               | 31.6<br>25.6       |
| 143      | Saltair      | 0-6<br>6-12       | SiCL<br>SiCL   | 9<br>18                          | 62<br>52 | 29<br>30 | 99                        | 0                         | 1.98<br>1.05               | 25                               | 21         | 4  | CL-ML        | 1.34<br>1.34      | 35.4<br>37.6               | 36.0<br>37.1       |
| 144      | Saltair      | 0-6<br>6-12       | SIL<br>SiCL    | 13<br>10                         | 69<br>56 | 18<br>34 | 99                        | 0                         | 1.05<br>1.33               | 38                               | 20         | 18 | CL           | 1.33<br>1.30      | 37.9<br>38.6               | 37.4<br>38.3       |
| 145      | Unclassified | 0-6<br>6-12       | SIL<br>L       | 28<br>29                         | 52<br>45 | 20<br>26 | 50                        | 0                         | 2.02<br>1.77               | 31                               | 15         | 16 | CL           | 1.51<br>1.40      | 25.2<br>26.2               | 18.0<br>19.2       |

\*\* Modified technique

\*\* Bulk density and moisture content values questionable.

§ 16% soluble salts washed out before testing.



Table B3a (Continued)  
Southern Region (Continued)

| Soil Moisture Content                                   |             |       |       |       |       |              |       |       |         | Remold-      |               | Depth to<br>Water |      |      |      |      |
|---|-------------|-------|-------|-------|-------|--------------|-------|-------|---------|--------------|---------------|-------------------|------|------|------|------|
| Percent Weight Basis                                    |             |       |       |       |       |              |       |       |         | ing<br>Index | ing<br>Index  |                   |      |      |      |      |
| Sample<br>Date  | 0- to 6-in. |       |       |       |       | 6- to 12-in. |       |       |         |              | Cone<br>Index | Depth to<br>Water |      |      |      |      |
|   | Depth       | Depth | Depth | Depth | Depth | Depth        | Depth | Depth | Depth   | Depth        |               |                   |      |      |      |      |
| Site 115, St. Francis Co., Ark.<br>Loring Sil/Sil (ML)  |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| 7/7/54  | 5.7         | 6.3   | 10.1  | 0.45  | 0.53  | 300+         | ----  | ----  | 7/7/54  | 7.9          | 12.7          | 14.7              | 0.74 | 1.17 | 300+ | ---- |
| 8/17/54   | 3.3         | 7.2   | 9.5   | 0.66  | 0.61  | 300+         | ----  | ----  | 8/17/54 | 9.6          | 11.8          | 13.0              | 0.90 | 1.09 | 300+ | ---- |
| 9/29/54   | 2.9         | 6.5   | 8.9   | 0.22  | 0.55  | 300+         | ----  | ----  | 9/29/54 | 6.8          | 10.2          | 12.9              | 0.54 | 0.94 | 300+ | ---- |
| 1/4/55  | 26.4        | 22.9  | 22.5  | 2.09  | 1.93  | 198          | ----  | ----  | 1/4/55  | 26.3         | 25.4          | 17.9              | 2.16 | 2.33 | 250  | ---- |
| 2/15/55   | 30.7        | 27.7  | 26.3  | 2.43  | 2.34  | 150          | 0.30  | ----  | 2/15/55 | 26.9         | 26.6          | 24.2              | 2.52 | 2.46 | 228  | 0.75 |
| 3/15/55   | 31.5        | 27.5  | 28.5  | 2.49  | 2.33  | 111          | 0.44  | ----  | 3/15/55 | 26.3         | 26.8          | 24.1              | 2.46 | 2.48 | 187  | 0.94 |
| 4/18/55   | 29.7        | 27.4  | 28.1  | 2.35  | 2.32  | 142          | ----  | ----  | 4/18/55 | 23.4         | 23.9          | 23.5              | 2.19 | 2.21 | 199  | ---- |
| 5/4/55  | 25.0        | 22.1  | 24.7  | 1.98  | 1.87  | 196          | ----  | ----  | 5/5/55  | 17.6         | 21.4          | 23.0              | 1.65 | 1.98 | 300  | ---- |
| Site 116, St. Francis Co., Ark.<br>Grenada Sil/Sil (CL) |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| Site 117, St. Francis Co., Ark.<br>Loring Sil/Sil (CL)  |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| 7/7/54  | 10.3        | 12.6  | 11.6  | 0.82  | 1.10  | 300+         | ----  | ----  | 7/7/54  | 4.7          | 8.3           | 11.6              | 0.42 | 0.78 | 300+ | ---- |
| 8/17/54   | 10.4        | 10.7  | 10.2  | 0.2   | 0.94  | 300+         | ----  | ----  | 8/17/54 | 7.9          | 9.6           | 10.0              | 0.69 | 0.90 | 300+ | ---- |
| 9/29/54   | 3.0         | 11.1  | 10.2  | 0.11  | 0.97  | 300+         | ----  | ----  | 9/29/54 | 6.2          | 9.1           | 15.7              | 0.54 | 0.85 | 300+ | ---- |
| 1/4/55  | 26.9        | 27.7  | 23.2  | 2.13  | 2.43  | 144          | ----  | ----  | 1/5/55  | 24.2         | 25.0          | 23.9              | 2.12 | 2.34 | 244  | ---- |
| 2/15/55   | 31.6        | 31.2  | 29.1  | 2.50  | 2.73  | 100          | 0.64  | ----  | 2/15/55 | 26.2         | 25.1          | 24.4              | 2.30 | 2.35 | 259  | NT   |
| 3/15/55   | 34.8        | 30.8  | 29.3  | 2.76  | 2.70  | 112          | 0.74  | ----  | 3/15/55 | 26.0         | 24.4          | 25.6              | 2.20 | 2.28 | 244  | 0.64 |
| 4/19/55   | 34.4        | 30.9  | 28.3  | 2.72  | 2.70  | 71           | ----  | ----  | 4/19/55 | 22.8         | 22.7          | 24.7              | 2.00 | 2.12 | 239  | ---- |
| 5/5/55  | 28.6        | 25.1  | 25.7  | 2.27  | 2.20  | 146          | ----  | ----  | 5/5/55  | 14.3         | 20.1          | 22.6              | 1.25 | 1.88 | 300+ | ---- |
| Site 119, Lee Co., Ark.<br>Clack Sil/Sil (SM)           |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| 7/7/54  | 3.5         | 3.2   | 3.7   | 0.32  | 0.30  | 300          | ----  | ----  | 7/8/54  | 12.3         | 5.8           | 2.9               | 1.03 | 0.55 | 300+ | ---- |
| 8/17/54   | 2.8         | 2.5   | 2.2   | 0.25  | 0.23  | 300+         | ----  | ----  | 8/17/54 | 12.4         | 7.7           | 6.2               | 1.03 | 0.73 | 300+ | ---- |
| 9/29/54   | 3.6         | 4.3   | 2.7   | 0.34  | 0.40  | 300+         | ----  | ----  | 9/29/54 | 17.4         | 8.7           | 6.8               | 1.45 | 0.83 | 300+ | ---- |
| 1/5/55  | 15.5        | 11.7  | 0.3   | 1.40  | 1.10  | 300+         | ----  | ----  | 1/5/55  | 27.7         | 19.0          | 15.1              | 2.31 | 1.81 | 293  | ---- |
| 2/15/55   | 11.1        | 12.4  | 6.7   | 1.55  | 1.16  | 300+         | NT    | ----  | 2/15/55 | 24.9         | 18.8          | 17.4              | 2.08 | 1.79 | 300+ | ---- |
| 3/15/55   | 17.5        | 11.1  | 11.3  | 1.59  | 1.04  | 188          | NT    | ----  | 3/15/55 | 29.2         | 17.2          | 17.3              | 2.46 | 1.64 | 282  | NT   |
| 4/19/55   | 19.5        | 18.2  | 21.7  | 1.77  | 1.72  | 235          | ----  | ----  | 4/19/55 | 24.6         | 18.9          | 19.5              | 2.05 | 1.80 | 204  | ---- |
| 5/5/55  | 16.6        | 14.0  | 1.46  | 1.55  | 273   | ----         | ----  | ----  | 5/5/55  | 20.8         | 23.5          | 16.2              | 1.73 | 2.24 | 287  | ---- |
| Site 120, Lee Co., Ark.<br>Forendale Sil/Sil (CL)       |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| Site 121, Phillips Co., Ark.<br>Calhoun Sil/Sil (ML)    |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| 7/8/54  | 1.5         | 4.5   | 6.6   | 0.33  | 0.40  | 300+         | ----  | ----  | 7/8/54  | 11.1         | 8.8           | 10.7              | 0.87 | 0.75 | 300+ | ---- |
| 8/17/54   | 1.4         | 6.7   | 8.4   | 0.38  | 0.60  | 300+         | ----  | ----  | 8/17/54 | 16.1         | 9.1           | 11.0              | 1.27 | 0.78 | 300+ | ---- |
| 9/29/54   | 3.3         | 6.6   | 7.0   | 0.29  | 0.59  | 300+         | ----  | ----  | 9/29/54 | 13.5         | 8.0           | 11.4              | 1.06 | 0.68 | 300+ | ---- |
| 1/5/55  | 25.1        | 23.3  | 21.8  | 2.18  | 2.08  | 269          | ----  | ----  | 1/5/55  | 31.9         | 28.2          | 27.9              | 2.51 | 2.40 | 124  | ---- |
| 2/15/55   | 25.7        | 21.4  | 21.2  | 2.24  | 1.91  | 300          | NT    | ----  | 2/15/55 | 37.2         | 32.3          | 29.6              | 2.92 | 2.75 | 107  | 0.78 |
| 3/15/55   | 28.9        | 22.2  | 20.7  | 2.51  | 1.98  | 181          | NT    | ----  | 3/15/55 | 41.1         | 33.7          | 32.7              | 3.23 | 2.87 | 61   | 0.33 |
| 4/19/55   | 16.8        | 18.1  | 20.0  | 1.46  | 1.62  | 300+         | ----  | ----  | 4/19/55 | 45.5         | 37.1          | 30.9              | 3.58 | 3.16 | 72   | ---- |
| 5/5/55  | 16.8        | 18.1  | 20.0  | 1.46  | 1.62  | 300+         | ----  | ----  | 5/5/55  | 30.1         | 28.3          | 29.5              | 2.37 | 2.41 | 111  | ---- |
| Disked ab. ut 6 in. deep before 3/15/55                 |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| Site 122, Phillips Co., Ark.<br>Haverly Sil/Sil (CL-ML) |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| 7/8/54  | 11.1        | 8.8   | 10.7  | 0.87  | 0.75  | 300+         | ----  | ----  | 7/8/54  | 6.2          | 7.1           | 11.2              | 0.54 | 0.63 | 300+ | ---- |
| 8/17/54   | 16.1        | 9.1   | 11.0  | 1.27  | 0.78  | 300+         | ----  | ----  | 8/17/54 | 6.1          | 7.3           | 10.0              | 0.53 | 0.65 | 300+ | ---- |
| 9/29/54   | 13.5        | 8.0   | 11.4  | 1.06  | 0.68  | 300+         | ----  | ----  | 9/30/54 | 18.2         | 19.8          | 13.0              | 1.58 | 1.77 | 300+ | ---- |
| 1/5/55  | 31.9        | 28.2  | 27.9  | 2.51  | 2.40  | 124          | ----  | ----  | 1/5/55  | 23.5         | 22.5          | 22.3              | 2.04 | 2.01 | 151  | ---- |
| 2/15/55   | 37.2        | 32.3  | 29.6  | 2.92  | 2.75  | 107          | 0.78  | DRY   | 2/15/55 | 25.1         | 24.3          | 25.3              | 2.18 | 2.17 | 130  | 0.66 |
| 3/15/55   | 41.1        | 33.7  | 32.7  | 3.23  | 2.87  | 61           | 0.33  | 6     | 3/15/55 | 24.8         | 24.5          | 26.0              | 2.16 | 2.19 | 132  | 0.74 |
| 4/19/55   | 45.5        | 37.1  | 30.9  | 3.58  | 3.16  | 72           | ----  | 3     | 4/19/55 | 22.6         | 22.1          | 23.1              | 1.97 | 1.98 | 155  | ---- |
| 5/5/55  | 30.1        | 28.3  | 29.5  | 2.37  | 2.41  | 111          | ----  | 29    | 5/6/55  | 15.9         | 17.6          | 19.9              | 1.38 | 1.57 | 223  | ---- |
| Area burned over before 2/15/55                         |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| Site 124, Drew Co., Ark.<br>Dulac Sil/Sil (CL)          |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| 7/9/54  | 17.0        | 31.4  | 34.0  | 1.21  | 2.28  | 221          | ----  | ----  | 7/9/54  | 13.8         | 5.9           | 9.3               | 1.25 | 0.57 | 300+ | ---- |
| 8/17/54   | 10.9        | 24.6  | 29.0  | 0.78  | 1.79  | 300+         | ----  | ----  | 8/17/54 | 4.8          | 6.4           | 11.3              | 0.43 | 0.61 | 300+ | ---- |
| 9/29/54   | 22.1        | 34.4  | 32.8  | 1.58  | 2.50  | 268          | ----  | ----  | 9/30/54 | 11.4         | 7.4           | 11.4              | 1.03 | 0.71 | 300+ | ---- |
| 1/5/55  | 27.1        | 37.7  | 37.3  | 1.98  | 2.74  | 168          | ----  | ----  | 1/27/55 | 22.6         | 10.6          | 21.2              | 2.05 | 1.88 | 132  | 0.62 |
| 2/15/55   | 29.0        | 33.6  | 38.7  | 2.07  | 2.44  | 174          | 1.02  | ----  | 2/15/55 | 21.3         | 21.5          | 24.2              | 1.93 | 2.06 | 163  | NT   |
| 3/15/55   | 36.7        | 35.8  | 38.7  | 2.19  | 2.60  | 164          | ----  | ----  | 3/15/55 | 14.4         | 15.7          | 19.0              | 1.30 | 1.46 | 269  | NT   |
| 4/19/55   | 28.0        | 39.6  | 41.9  | 2.00  | 2.87  | 131          | ----  | ----  | 4/19/55 | 22.5         | 22.4          | 21.7              | 2.04 | 2.15 | 108  | ---- |
| 5/6/55  | 23.3        | 41.7  | 45.3  | 2.78  | 3.03  | 152          | ----  | ----  | 5/6/55  | 13.9         | 16.3          | 17.0              | 1.26 | 1.56 | 253  | ---- |
| Site 125, Drew Co., Ark.<br>Boswell L/C (CL)            |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| 7/9/54  | 14.4        | 3.2   | 7.3   | 1.36  | 0.30  | 300+         | ----  | ----  | 7/9/54  | 17.0         | 7.6           | 18.2              | 1.39 | 0.69 | 300+ | ---- |
| 8/17/54   | 0.6         | 3.4   | 7.5   | 0.06  | 0.32  | 300+         | ----  | ----  | 8/17/54 | 7.4          | 6.3           | 15.0              | 0.0  | 0.57 | 300+ | ---- |
| 9/30/54   | 3.3         | 5.4   | 3.5   | 0.80  | 0.51  | 300+         | ----  | ----  | 9/30/54 | 15.6         | 7.5           | 12.0              | 1.27 | 0.68 | 300+ | ---- |
| 1/27/55   | 21.1        | 16.0  | 15.0  | 1.79  | 1.50  | 300+         | NT    | ----  | 1/27/55 | 32.3         | 34.0          | 35.6              | 2.62 | 2.10 | 133  | 0.18 |
| 2/15/55   | 19.0        | 17.8  | 18.2  | 1.70  | 1.67  | 300+         | NT    | DRY   | 2/15/55 | 27.9         | 27.9          | 26.9              | 2.28 | 2.54 | 138  | NT   |
| 3/15/55   | 7           | 16.0  | 18.0  | 0.73  | 1.50  | 300+         | NT    | DRY   | 3/15/55 | 26.7         | 24.9          | 28.5              | 2.18 | 2.27 | 151  | NT   |
| 4/19/55   | 2.8         | 15.3  | 17.8  | 1.21  | 1.43  | 300+         | NT    | DRY   | 4/19/55 | 30.1         | 27.7          | 30.7              | 2.46 | 2.53 | 178  | ---- |
| 5/6/55  | 5.2         | 12.8  | 15.7  | 0.49  | 1.20  | 300+         | NT    | DRY   | 5/6/55  | 24.2         | 21.6          | 23.4              | 1.97 | 1.97 | 203  | ---- |
| Site 127, Ashley Co., Ark.<br>Lafe Sil/Sil (ML)         |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| 7/9/54  | 14.4        | 3.2   | 7.3   | 1.36  | 0.30  | 300+         | ----  | ----  | 7/9/54  | 17.0         | 7.6           | 18.2              | 1.39 | 0.69 | 300+ | ---- |
| 8/17/54   | 0.6         | 3.4   | 7.5   | 0.06  | 0.32  | 300+         | ----  | ----  | 8/17/54 | 7.4          | 6.3           | 15.0              | 0.0  | 0.57 | 300+ | ---- |
| 9/30/54   | 3.3         | 5.4   | 3.5   | 0.80  | 0.51  | 300+         | ----  | ----  | 9/30/54 | 15.6         | 7.5           | 12.0              | 1.27 | 0.68 | 300+ | ---- |
| 1/27/55   | 21.1        | 16.0  | 15.0  | 1.79  | 1.50  | 300+         | NT    | ----  | 1/27/55 | 32.3         | 34.0          | 35.6              | 2.62 | 2.10 | 133  | 0.18 |
| 2/15/55   | 19.0        | 17.8  | 18.2  | 1.70  | 1.67  | 300+         | NT    | DRY   | 2/15/55 | 27.9         | 27.9          | 26.9              | 2.28 | 2.54 | 138  | NT   |
| 3/15/55   | 7           | 16.0  | 18.0  | 0.73  | 1.50  | 300+         | NT    | DRY   | 3/15/55 | 26.7         | 24.9          | 28.5              | 2.18 | 2.27 | 151  | NT   |
| 4/19/55   | 2.8         | 15.3  | 17.8  | 1.21  | 1.43  | 300+         | NT    | DRY   | 4/19/55 | 30.1         | 27.7          | 30.7              | 2.46 | 2.53 | 178  | ---- |
| 5/6/55  | 5.2         | 12.8  | 15.7  | 0.49  | 1.20  | 300+         | NT    | DRY   | 5/6/55  | 24.2         | 21.6          | 23.4              | 1.97 | 1.97 | 203  | ---- |
| Site 128, Ashley Co., Ark.<br>Haverly Sil/Sil (ML)      |             |       |       |       |       |              |       |       |         |              |               |                   |      |      |      |      |
| 7/9/54  | 17.0        | 7.6   | 18.2  | 1.39  | 0.69  | 300+         | ----  | ----  | 7/9/54  | 17.0         | 7.6           | 18.2              | 1.39 | 0.69 | 300+ | ---- |
| 8/17/54   | 7.4         | 6.3   | 15.0  | 0.0   | 0.57  | 300+         | ----  | ----  | 8/17/54 | 7.4          | 6.3           | 15.0              | 0.0  | 0.57 | 300+ | ---- |
| 9/30/54   | 15.6        | 7.5   | 12.0  | 1.27  | 0.68  | 300+         | ----  | ----  | 9/30/54 | 15.6         | 7.5           | 12.0              | 1.27 | 0.68 | 300+ | ---- |
| 1/27/55   | 32.3        | 34.0  | 35.6  | 2.62  | 2.10  | 133          | 0.18  | 6     | 1/27/55 | 32.3         | 34.0          | 35.6              | 2.62 | 2.10 | 133  | 0.18 |
| 2/15/55   | 27.9        | 27.9  | 26.9  | 2.28  | 2.54  | 138          | NT    | 15    | 2/15/55 | 27.9         | 27.9          | 26.9              | 2.28 | 2.54 | 138  | NT   |
| 3/15/55   | 26.7        | 24.9  | 28.5  | 2.18  | 2.27  | 151          | NT    | 21    | 3/15/55 | 26.7         | 24.9          | 28.5              | 2.18 | 2.27 | 151  | NT   |
| 4/19/55   | 30.1        | 27.7  | 30.7  | 2.46  | 2.53  | 178          | ----  | 22    | 4/19/55 | 30.1         | 27.7          | 30.7              | 2.46 | 2.53 | 178  | ---- |
| 5/6/55  | 24.2        | 21.6  | 23.4  | 1.97  | 1.97  | 203          | ----  | DRY   | 5/6/55  | 24.2         | 21.6          | 23.4              | 1.97 | 1.97 | 203  | ---- |

(Continued)

Note: NT = no test.



Table B3a (Continued)  
Southern Region (Continued)

| Soil Moisture Content           |                   |       |                    |       |                     |       |                     |       |                     | Cone Index | Remold- ing Index | Depth to Water Table in. | Soil Moisture Content |                    |       |                     |       |                     |       |                     |       |             | Cone Index        | Remold- ing Index | Depth to Water Table in. |       |                     |       |                     |       |                     |       |      |      |      |
|---------------------------------|-------------------|-------|--------------------|-------|---------------------|-------|---------------------|-------|---------------------|------------|-------------------|--------------------------|-----------------------|--------------------|-------|---------------------|-------|---------------------|-------|---------------------|-------|-------------|-------------------|-------------------|--------------------------|-------|---------------------|-------|---------------------|-------|---------------------|-------|------|------|------|
| Percent Weight Basis            |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          | Percent Weight Basis  |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| Sample Date                     | 0- to 6-in. Depth |       | 6- to 12-in. Depth |       | 12- to 18-in. Depth |       | 18- to 24-in. Depth |       | 24- to 30-in. Depth |            | Sample Date       | 0- to 6-in. Depth        |                       | 6- to 12-in. Depth |       | 12- to 18-in. Depth |       | 18- to 24-in. Depth |       | 24- to 30-in. Depth |       | Sample Date | 0- to 6-in. Depth |                   | 6- to 12-in. Depth       |       | 12- to 18-in. Depth |       | 18- to 24-in. Depth |       | 24- to 30-in. Depth |       |      |      |      |
|                                 | Depth             | Depth | Depth              | Depth | Depth               | Depth | Depth               | Depth | Depth               | Depth      |                   | Depth                    | Depth                 | Depth              | Depth | Depth               | Depth | Depth               | Depth | Depth               | Depth |             | Depth             | Depth             | Depth                    | Depth | Depth               | Depth | Depth               | Depth | Depth               | Depth |      |      |      |
| Site 129, Ashley Co., Ark.      |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| Lexington Sil/Sil (CL)          |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| 7/9/54                          | 7.0               | 7.9   | 11.9               | 0.64  | 0.75                | 300+  | ----                | ----  | 7/9/54              | 10.6       | 5.6               | 3.0                      | 0.98                  | 0.51               | 300+  | ----                | ----  | 7/9/54              | 10.6  | 5.6                 | 3.0   | 0.98        | 0.51              | 300+              | ----                     | ----  | 7/9/54              | 10.6  | 5.6                 | 3.0   | 0.98                | 0.51  | 300+ | ---- | ---- |
| 8/17/54                         | 3.6               | 8.4   | 11.7               | 0.33  | 0.80                | 300+  | ----                | ----  | 8/17/54             | 3.5        | 5.9               | 7.7                      | 0.32                  | 0.54               | 300+  | ----                | ----  | 8/17/54             | 3.5   | 5.9                 | 7.7   | 0.32        | 0.54              | 300+              | ----                     | ----  | 8/17/54             | 3.5   | 5.9                 | 7.7   | 0.32                | 0.54  | 300+ | ---- | ---- |
| 9/30/54                         | 7.1               | 9.1   | 11.9               | 0.65  | 0.86                | 300+  | ----                | ----  | 9/30/54             | 6.1        | 6.8               | 9.2                      | 0.56                  | 0.62               | 300+  | ----                | ----  | 9/30/54             | 6.1   | 6.8                 | 9.2   | 0.56        | 0.62              | 300+              | ----                     | ----  | 9/30/54             | 6.1   | 6.8                 | 9.2   | 0.56                | 0.62  | 300+ | ---- | ---- |
| 1/27/55                         | 16.1              | 20.7  | 20.7               | 1.47  | 1.96                | 168   | 0.87                | 0.87  | 1/27/55             | 23.3       | 24.0              | 26.1                     | 2.20                  | 2.19               | 100   | 0.41                | 0.41  | 1/27/55             | 23.3  | 24.0                | 26.1  | 2.20        | 2.19              | 100               | 0.41                     | 0.41  | 1/27/55             | 23.3  | 24.0                | 26.1  | 2.20                | 2.19  | 100  | 0.41 | 0.41 |
| 2/15/55                         | 18.5              | 23.4  | 24.1               | 1.69  | 2.22                | 120   | NT                  | NT    | 2/15/55             | 23.5       | 24.7              | 27.2                     | 2.17                  | 2.25               | 112   | NT                  | NT    | 2/15/55             | 23.5  | 24.7                | 27.2  | 2.17        | 2.25              | 112               | NT                       | NT    | 2/15/55             | 23.5  | 24.7                | 27.2  | 2.17                | 2.25  | 112  | NT   | NT   |
| 3/15/55                         | 16.9              | 20.0  | 22.0               | 1.54  | 1.90                | 187   | NT                  | NT    | 3/15/55             | 21.5       | 21.8              | 22.8                     | 1.99                  | 1.99               | 147   | NT                  | NT    | 3/15/55             | 21.5  | 21.8                | 22.8  | 1.99        | 1.99              | 147               | NT                       | NT    | 3/15/55             | 21.5  | 21.8                | 22.8  | 1.99                | 1.99  | 147  | NT   | NT   |
| 4/19/55                         | 19.2              | 23.8  | 25.0               | 1.75  | 2.26                | 96    | ----                | ----  | 4/19/55             | 22.7       | 22.9              | 24.3                     | 2.10                  | 2.09               | 135   | ----                | ----  | 4/19/55             | 22.7  | 22.9                | 24.3  | 2.10        | 2.09              | 135               | ----                     | ----  | 4/19/55             | 22.7  | 22.9                | 24.3  | 2.10                | 2.09  | 135  | ---- | ---- |
| 5/6/55                          | 9.6               | 17.5  | 20.3               | 0.88  | 1.66                | 246   | ----                | ----  | 5/6/55              | 17.8       | 19.8              | 22.4                     | 1.64                  | 1.81               | 198   | ----                | ----  | 5/6/55              | 17.8  | 19.8                | 22.4  | 1.64        | 1.81              | 198               | ----                     | ----  | 5/6/55              | 17.8  | 19.8                | 22.4  | 1.64                | 1.81  | 198  | ---- | ---- |
| Site 131, Morehouse Parish, La. |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| Vian Sil/Sil (ML)               |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| 7/26/54                         | 4.6               | 7.3   | 9.0                | 0.41  | 0.70                | 275   | ----                | ----  | 7/26/54             | 8.1        | 10.6              | 11.0                     | 0.75                  | 1.04               | 300+  | ----                | ----  | 7/26/54             | 8.1   | 10.6                | 11.0  | 0.75        | 1.04              | 300+              | ----                     | ----  | 7/26/54             | 8.1   | 10.6                | 11.0  | 0.75                | 1.04  | 300+ | ---- | ---- |
| 8/18/54                         | 2.4               | 4.3   | 6.7                | 0.22  | 0.41                | 300+  | ----                | ----  | 8/18/54             | 2.9        | 5.8               | 9.7                      | 0.27                  | 0.57               | 300+  | ----                | ----  | 8/18/54             | 2.9   | 5.8                 | 9.7   | 0.27        | 0.57              | 300+              | ----                     | ----  | 8/18/54             | 2.9   | 5.8                 | 9.7   | 0.27                | 0.57  | 300+ | ---- | ---- |
| 9/30/54                         | 5.0               | 4.8   | 6.4                | 0.45  | 0.46                | 300+  | ----                | ----  | 9/30/54             | 7.2        | 6.6               | 9.2                      | 0.67                  | 0.65               | 300+  | ----                | ----  | 9/30/54             | 7.2   | 6.6                 | 9.2   | 0.67        | 0.65              | 300+              | ----                     | ----  | 9/30/54             | 7.2   | 6.6                 | 9.2   | 0.67                | 0.65  | 300+ | ---- | ---- |
| 1/27/55                         | 11.2              | 14.0  | 17.6               | 1.01  | 1.34                | 164   | 1.18                | 1.18  | 1/27/55             | 19.7       | 18.6              | 20.3                     | 1.32                  | 1.82               | 126   | 0.48                | 0.48  | 1/27/55             | 19.7  | 18.6                | 20.3  | 1.32        | 1.82              | 126               | 0.48                     | 0.48  | 1/27/55             | 19.7  | 18.6                | 20.3  | 1.32                | 1.82  | 126  | 0.48 | 0.48 |
| 2/16/55                         | 11.6              | 13.0  | 17.7               | 1.04  | 1.25                | 191   | NT                  | NT    | 2/16/55             | 19.3       | 18.8              | 18.9                     | 1.78                  | 1.84               | 136   | 0.63                | 0.63  | 2/16/55             | 19.3  | 18.8                | 18.9  | 1.78        | 1.84              | 136               | 0.63                     | 0.63  | 2/16/55             | 19.3  | 18.8                | 18.9  | 1.78                | 1.84  | 136  | 0.63 | 0.63 |
| 3/16/55                         | 9.1               | 13.4  | 15.1               | 0.32  | 1.29                | 199   | NT                  | NT    | 3/16/55             | 13.8       | 15.2              | 19.2                     | 1.28                  | 1.49               | 211   | NT                  | NT    | 3/16/55             | 13.8  | 15.2                | 19.2  | 1.28        | 1.49              | 211               | NT                       | NT    | 3/16/55             | 13.8  | 15.2                | 19.2  | 1.28                | 1.49  | 211  | NT   | NT   |
| 4/19/55                         | 7.6               | 12.3  | 17.7               | 0.68  | 1.18                | 165   | ----                | ----  | 4/20/55             | 14.5       | 16.0              | 20.4                     | 1.34                  | 1.56               | 157   | ----                | ----  | 4/20/55             | 14.5  | 16.0                | 20.4  | 1.34        | 1.56              | 157               | ----                     | ----  | 4/20/55             | 14.5  | 16.0                | 20.4  | 1.34                | 1.56  | 157  | ---- | ---- |
| 5/27/55                         | 10.6              | 14.9  | 15.7               | 0.95  | 1.43                | 127   | ----                | ----  | 5/27/55             | 18.9       | 18.8              | 19.4                     | 1.75                  | 1.84               | 125   | ----                | ----  | 5/27/55             | 18.9  | 18.8                | 19.4  | 1.75        | 1.84              | 125               | ----                     | ----  | 5/27/55             | 18.9  | 18.8                | 19.4  | 1.75                | 1.84  | 125  | ---- | ---- |
| Site 133, Morehouse Parish, La. |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| Wrightsville Sil/Sil (ML)       |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| 7/26/54                         | 2.6               | 3.7   | 4.0                | 0.25  | 0.37                | 300+  | ----                | ----  | 7/26/54             | 5.4        | 6.0               | 8.8                      | 0.56                  | 0.64               | 300+  | ----                | ----  | 7/26/54             | 5.4   | 6.0                 | 8.8   | 0.56        | 0.64              | 300+              | ----                     | ----  | 7/26/54             | 5.4   | 6.0                 | 8.8   | 0.56                | 0.64  | 300+ | ---- | ---- |
| 8/18/54                         | 1.6               | 2.4   | 2.9                | 0.15  | 0.24                | 300+  | ----                | ----  | 8/18/54             | 1.3        | 4.4               | 7.4                      | 0.19                  | 0.47               | 300+  | ----                | ----  | 8/18/54             | 1.3   | 4.4                 | 7.4   | 0.19        | 0.47              | 300+              | ----                     | ----  | 8/18/54             | 1.3   | 4.4                 | 7.4   | 0.19                | 0.47  | 300+ | ---- | ---- |
| 9/30/54                         | 9.2               | 4.9   | 5.3                | 0.95  | 0.49                | 300+  | ----                | ----  | 9/30/54             | 4.8        | 5.5               | 8.0                      | 0.50                  | 0.59               | 300+  | ----                | ----  | 9/30/54             | 4.8   | 5.5                 | 8.0   | 0.50        | 0.59              | 300+              | ----                     | ----  | 9/30/54             | 4.8   | 5.5                 | 8.0   | 0.50                | 0.59  | 300+ | ---- | ---- |
| 1/28/55                         | 26.1              | 21.4  | 22.0               | 2.52  | 2.16                | 139   | 0.26                | 0.26  | 1/28/55             | 15.3       | 15.0              | 17.3                     | 1.60                  | 1.60               | 156   | 0.66                | 0.66  | 1/28/55             | 15.3  | 15.0                | 17.3  | 1.60        | 1.60              | 156               | 0.66                     | 0.66  | 1/28/55             | 15.3  | 15.0                | 17.3  | 1.60                | 1.60  | 156  | 0.66 | 0.66 |
| 2/16/55                         | 27.6              | 19.4  | 19.3               | 2.09  | 1.96                | 213   | 0.44                | 0.44  | 2/16/55             | 15.2       | 16.6              | 17.2                     | 1.59                  | 1.77               | 206   | 0.60                | 0.60  | 2/16/55             | 15.2  | 16.6                | 17.2  | 1.59        | 1.77              | 206               | 0.60                     | 0.60  | 2/16/55             | 15.2  | 16.6                | 17.2  | 1.59                | 1.77  | 206  | 0.60 | 0.60 |
| 3/16/55                         | 21.5              | 17.5  | 17.8               | 2.08  | 1.76                | 266   | NT                  | NT    | 3/16/55             | 7.9        | 10.0              | 13.6                     | 0.82                  | 1.07               | 284   | NT                  | NT    | 3/16/55             | 7.9   | 10.0                | 13.6  | 0.82        | 1.07              | 284               | NT                       | NT    | 3/16/55             | 7.9   | 10.0                | 13.6  | 0.82                | 1.07  | 284  | NT   | NT   |
| 4/20/55                         | 22.5              | 15.9  | 19.9               | 2.17  | 1.60                | 258   | ----                | ----  | 4/20/55             | 10.0       | 12.0              | 15.6                     | 1.04                  | 1.28               | 246   | ----                | ----  | 4/20/55             | 10.0  | 12.0                | 15.6  | 1.04        | 1.28              | 246               | ----                     | ----  | 4/20/55             | 10.0  | 12.0                | 15.6  | 1.04                | 1.28  | 246  | ---- | ---- |
| 5/27/55                         | 20.3              | 18.9  | 18.3               | 1.96  | 1.91                | 257   | ----                | ----  | 5/27/55             | 14.7       | 14.6              | 14.8                     | 1.53                  | 1.56               | 197   | ----                | ----  | 5/27/55             | 14.7  | 14.6                | 14.8  | 1.53        | 1.56              | 197               | ----                     | ----  | 5/27/55             | 14.7  | 14.6                | 14.8  | 1.53                | 1.56  | 197  | ---- | ---- |
| Site 135, Ouachita Parish, La.  |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| Thompson Sil/Sil (SH)           |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| 7/26/54                         | 7.8               | 7.2   | 5.5                | 0.74  | 0.73                | 300+  | ----                | ----  | 7/26/54             | 3.6        | 4.6               | 8.4                      | 0.35                  | 0.43               | 300+  | ----                | ----  | 7/26/54             | 3.6   | 4.6                 | 8.4   | 0.35        | 0.43              | 300+              | ----                     | ----  | 7/26/54             | 3.6   | 4.6                 | 8.4   | 0.35                | 0.43  | 300+ | ---- | ---- |
| 8/18/54                         | 2.2               | 2.8   | 3.3                | 0.21  | 0.28                | 300+  | ----                | ----  | 8/18/54             | 1.2        | 3.2               | 7.7                      | 0.12                  | 0.33               | 300+  | ----                | ----  | 8/18/54             | 1.2   | 3.2                 | 7.7   | 0.12        | 0.33              | 300+              | ----                     | ----  | 8/18/54             | 1.2   | 3.2                 | 7.7   | 0.12                | 0.33  | 300+ | ---- | ---- |
| 9/30/54                         | 6.3               | 3.4   | 2.8                | 0.60  | 0.34                | 300+  | ----                | ----  | 9/30/54             | 3.5        | 3.1               | 9.2                      | 0.34                  | 0.22               | 300+  | ----                | ----  | 9/30/54             | 3.5   | 3.1                 | 9.2   | 0.34        | 0.22              | 300+              | ----                     | ----  | 9/30/54             | 3.5   | 3.1                 | 9.2   | 0.34                | 0.22  | 300+ | ---- | ---- |
| 1/28/55                         | 16.4              | 13.5  | 10.6               | 1.56  | 1.36                | 249   | NT                  | NT    | 1/28/55             | 12.4       | 10.5              | 14.6                     | 1.22                  | 1.10               | 231   | NT                  | NT    | 1/28/55             | 12.4  | 10.5                | 14.6  | 1.22        | 1.10              | 231               | NT                       | NT    | 1/28/55             | 12.4  | 10.5                | 14.6  | 1.22                | 1.10  | 231  | NT   | NT   |
| 2/16/55                         | 16.0              | 15.4  | 14.5               | 1.53  | 1.55                | 240   | 0.97                | 0.97  | 2/16/55             | 12.3       | 12.7              | 16.1                     | 1.21                  | 1.33               | 270   | NT                  | NT    | 2/16/55             | 12.3  | 12.7                | 16.1  | 1.21        | 1.33              | 270               | NT                       | NT    | 2/16/55             | 12.3  | 12.7                | 16.1  | 1.21                | 1.33  | 270  | NT   | NT   |
| 3/16/55                         | 15.6              | 12.8  | 10.4               | 1.49  | 1.29                | 300+  | NT                  | NT    | 3/16/55             | 8.1        | 8.2               | 13.9                     | 0.80                  | 0.86               | 300+  | NT                  | NT    | 3/16/55             | 8.1   | 8.2                 | 13.9  | 0.80        | 0.86              | 300+              | NT                       | NT    | 3/16/55             | 8.1   | 8.2                 | 13.9  | 0.80                | 0.86  | 300+ | NT   | NT   |
| 4/20/55                         | 15.3              | 14.4  | 14.1               | 1.46  | 1.45                | 198   | ----                | ----  | 4/20/55             | 11.6       | 10.3              | 14.9                     | 1.14                  | 1.08               | 262   | ----                | ----  | 4/20/55             | 11.6  | 10.3                | 14.9  | 1.14        | 1.08              | 262               | ----                     | ----  | 4/20/55             | 11.6  | 10.3                | 14.9  | 1.14                | 1.08  | 262  | ---- | ---- |
| 5/27/55                         | 19.1              | 16.2  | 15.6               | 1.82  | 1.63                | 168   | ----                | ----  | 5/27/55             | 13.4       | 11.6              | 16.9                     | 1.32                  | 1.21               | 171   | ----                | ----  | 5/27/55             | 13.4  | 11.6                | 16.9  | 1.32        | 1.21              | 171               | ----                     | ----  | 5/27/55             | 13.4  | 11.6                | 16.9  | 1.32                | 1.21  | 171  | ---- | ---- |
| Site 137, Grant Parish, La.     |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| Ruston Sil/Sil (SC)             |                   |       |                    |       |                     |       |                     |       |                     |            |                   |                          |                       |                    |       |                     |       |                     |       |                     |       |             |                   |                   |                          |       |                     |       |                     |       |                     |       |      |      |      |
| 7/27/54                         | 3.2               | 9.7   | 11.0               | 0.30  | 0.92                | 300+  | ----                | ----  | 7/27/54             | 10.9       | 9.2               | 6.3                      | 0.73                  | 0.65               | 282   | ----                | ----  | 7/27/54             | 10.9  | 9.2                 | 6.3   | 0.73        | 0.65              | 282               | ----                     | ----  | 7/27/54             | 10.9  | 9.2                 | 6.3   | 0.73                | 0.65  | 282  | ---- | ---- |
| 8/18/54                         | 2.2               | 8.6   | 9.5                | 0.21  | 0.82                | 300+  | ----                | ----  | 8/18/54             | 8.7        | 7.5               | 6.3                      | 0.58                  | 0.53               | 296   | ----                | ----  | 8/18/54             | 8.7   | 7.5                 | 6.3   | 0.58        | 0.53              | 296               | ----                     | ----  | 8/18/54             | 8.7   | 7.5                 | 6.3   | 0.58                | 0.53  | 296  | ---- | ---- |
| 10/12/54                        | 8.0               | 8.9   | 11.5               | 0.75  | 0.84                | 300+  | ----                | ----  | 10/12/54            | 12.9       | 9.0               | 5.1                      | 0.55                  | 0.64               | 277   | ----                | ----  | 10/12/54            | 12.9  | 9.0                 | 5.1   | 0.55        | 0.64              | 277               | ----                     | ----  | 10/12/54            | 12.9  | 9.0                 | 5.1   | 0.55                | 0.64  | 277  | ---- | ---- |
| 11/3/54                         | 9.2               | 12.1  | 10.9               | 0.86  | 1.15                | 300+  | ----                | ----  | 11/3/54             | 12.2       | 3.1               | 6.4                      | 0.81                  | 0.57               | 260   | ----                | ----  | 11/3/54             | 12.2  | 3.1                 | 6.4   | 0.81        | 0.57              | 260               | ----                     | ----  | 11/3/54             | 12.2  | 3.1                 | 6.4   | 0.81                | 0.57  | 260  | ---- | ---- |
| 2/15/55                         | 12.3              | 17.7  | 17.6               | 1.15  | 1.68                | 273   | 0.88                | 0.88  | 2/15/55             | 27.5       | 22.2              | 22.1                     | 1.83                  | 1.57               | 114   | 0.96                | 0.96  | 2/15/55             | 27.5  | 22.2                | 22.1  | 1.83        | 1.57              | 114               | 0.96                     | 0.96  | 2/15/55             | 27.5  | 22.2                | 22.1  | 1.83                | 1.57  | 114  | 0.96 | 0.96 |
| 3/16/55                         | 9.7               | 14.9  | 14.6               | 0.91  | 1.41                | 300+  | NT                  | NT    | 3/16/55             | 23.3       | 20.8              | 17.5                     | 1.55                  | 1.47               | 127   | NT                  | NT    | 3/16/55             | 23.3  | 20.8                | 17.5  | 1.55        | 1.47              | 127               | NT                       | NT    | 3/1                 |       |                     |       |                     |       |      |      |      |



Southern Region (Continued)

| Sample Date                       | Soil Moisture Content |              |               |               |               | Cone Index | Remold Index | Depth to Water Table in. | Sample Date | Soil Moisture Content |              |               |               |               | Cone Index | Remold Index | Depth to Water Table in. |
|-----------------------------------|-----------------------|--------------|---------------|---------------|---------------|------------|--------------|--------------------------|-------------|-----------------------|--------------|---------------|---------------|---------------|------------|--------------|--------------------------|
|                                   | Percent Weight Basis  |              |               |               |               |            |              |                          |             | Percent Weight Basis  |              |               |               |               |            |              |                          |
|                                   | 0- to 4-in.           | 4- to 12-in. | 12- to 18-in. | 18- to 24-in. | 24- to 30-in. |            |              |                          |             | 0- to 4-in.           | 4- to 12-in. | 12- to 18-in. | 18- to 24-in. | 24- to 30-in. |            |              |                          |
| Site 143, Livingston Parish, La.  |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| Olivier SIL/SIL (CL-MG)           |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| 7/28/54                           | 24.0                  | 15.2         | 14.7          | 2.11          | 1.50          | 300        | ----         |                          | 7/28/54     | 23.5                  | 11.3         | 18.0          | 1.73          | 1.12          | 300        | ----         |                          |
| 9/19/54                           | 12.2                  | 8.0          | 13.2          | 0.93          | 0.74          | 300+       | ----         |                          | 3/19/54     | 7.2                   | 9.2          | 15.2          | 0.59          | 0.91          | 300+       | ----         |                          |
| 10/13/54                          |                       |              |               |               |               |            |              |                          | 10/13/54    |                       |              |               |               |               |            |              |                          |
| 11/2/54                           | 20.5                  | 19.3         | 19.9          | 1.66          | 1.73          | 300        | ----         |                          | 11/2/54     | 24.7                  | 19.6         | 19.4          | 2.05          | 1.94          | 255        | ----         |                          |
| 2/17/55                           | 29.7                  | 25.6         | 26.1          | 2.41          | 2.37          | 173        | NT           |                          | 2/17/55     | 29.0                  | 19.3         | 24.9          | 2.38          | 1.96          | 300        | NT           |                          |
| 3/17/55                           | 13.4                  | 13.7         | 19.2          | 1.09          | 1.27          | 300+       | DRY          |                          | 3/17/55     | 12.9                  | 17.6         | 19.1          | 1.06          | 1.74          | 300+       | NT           |                          |
| 4/21/55                           | 26.5                  | 22.3         | 24.8          | 2.15          | 2.06          | 255        | DRY          |                          | 4/21/55     | 27.6                  | 19.9         | 23.4          | 2.27          | 1.97          | 250        | DRY          |                          |
| 5/28/55                           | 11.0                  | 11.2         | 14.6          | 0.99          | 1.03          | 300+       | DRY          |                          | 5/28/55     | 14.8                  | 13.2         | 13.2          | 1.22          | 1.34          | 300+       | DRY          |                          |
| Site 146, St. Tammany Parish, La. |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| Calhoun SIL/SIL (ML)              |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| 7/28/54                           | 20.7                  | 17.1         | 17.1          | 1.74          | 1.58          | 294        | ----         |                          | 7/28/54     | 24.1                  | 17.3         | 16.8          | 1.91          | 1.66          | 254        | ----         |                          |
| 9/19/54                           | 6.7                   | 13.4         | 16.6          | 0.59          | 1.24          | 300+       | ----         |                          | 9/19/54     | 7.4                   | 9.2          | 15.1          | 0.59          | 0.88          | 300+       | ----         |                          |
| 10/13/54                          |                       |              |               |               |               |            |              |                          | 10/13/54    | 26.4                  | 23.9         | 23.5          | 2.09          | 2.39          | 127        | ----         |                          |
| 11/2/54                           | 25.1                  | 22.8         | 22.3          | 2.11          | 2.11          | 140        | ----         |                          | 11/2/54     | 24.0                  | 21.3         | 20.5          | 1.90          | 1.04          | 195        | ----         |                          |
| 2/17/55                           | 32.5                  | 27.4         | 23.7          | 2.73          | 2.53          | 105        | 0.28         | DRY                      | 2/17/55     | 28.9                  | 21.4         | 25.2          | 2.29          | 2.05          | 137        | 0.58         | DRY                      |
| 3/17/55                           | 7.7                   | 1.4          | 24.2          | 0.26          | 1.28          | 171        | 0.50         | 30                       | 3/17/55     | 21.9                  | 15.7         | 19.2          | 1.73          | 1.51          | 249        | NT           | DRY                      |
| 4/21/55                           | 26.7                  | 22.5         | 22.9          | 2.24          | 2.08          | 175        |              | 23                       | 4/21/55     | 27.3                  | 23.0         | 22.7          | 2.15          | 2.11          | 124        | DRY          | DRY                      |
| 5/28/55                           | 15.3                  | 17.3         | 20.6          | 1.41          | 1.60          | 145        | ----         | DRY                      | 5/28/55     | 12.3                  | 11.7         | 15.1          | 0.77          | 1.12          | 300+       | ----         | DRY                      |
| Site 147, Pearl River Co., Miss.  |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| Jehannah L/L (CL)                 |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| 7/28/54                           | 19.9                  | 19.3         | 19.5          | 1.77          | 1.76          | 237        | ----         |                          | 7/28/54     | 12.7                  | 15.6         | 23.6          | 1.17          | 1.53          | 291        | ----         |                          |
| 9/19/54                           | 4.1                   | 5.2          | 10.6          | 0.36          | 0.59          | 300+       | ----         |                          | 9/19/54     | 3.3                   | 15.8         | 21.3          | 0.30          | 1.55          | 300+       | ----         |                          |
| 10/13/54                          | 17.7                  | 19.9         | 13.1          | 1.93          | 1.96          | 215        | ----         |                          | 10/13/54    | 22.6                  | 25.5         | 27.1          | 2.09          | 2.49          | 146        | ----         |                          |
| 11/2/54                           | 16.3                  | 17.8         | 19.2          | 1.45          | 1.67          | 237        | ----         |                          | 11/2/54     | 24.5                  | 22.5         | 25.0          | 2.26          | 2.20          | 156        | ----         |                          |
| 2/17/55                           | 19.5                  | 20.2         | 21.1          | 1.73          | 1.95          | 155        | 0.92         |                          | 2/17/55     | 16.7                  | 22.8         | 26.3          | 1.54          | 2.32          | 192        | 0.38         |                          |
| 3/17/55                           | 9.0                   | 14.3         | 15.3          | 0.30          | 1.34          | 238        | NT           |                          | 3/17/55     | 6.5                   | 19.1         | 23.5          | 0.60          | 1.87          | 277        | NT           |                          |
| 4/21/55                           | 17.6                  | 17.3         | 19.1          | 1.56          | 1.67          | 209        |              |                          | 4/21/55     | 13.1                  | 21.3         | 24.2          | 1.21          | 2.13          | 203        |              |                          |
| 5/28/55                           | 11.5                  | 15.0         | 18.6          | 1.03          | 1.50          | 225        | ----         |                          | 5/28/55     | 13.4                  | 21.8         | 24.9          | 1.24          | 2.13          | 197        | ----         |                          |
| Site 149, Pearl River Co., Miss.  |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| Sawyer SIL/SIL (ML)               |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| 7/28/54                           | 16.7                  | 13.9         | 16.3          | 1.50          | 1.46          | 277        | ----         |                          | 5/26/54     | 31.1                  | 25.3         | 25.3          | 2.50          | 2.11          | 294        | ----         |                          |
| 9/19/54                           | 4.9                   | 11.3         | 13.2          | 0.44          | 1.19          | 300+       | ----         |                          | 3/24/54     | 6.1                   | 4.9          | 6.3           | 0.49          | 0.40          | 300+       | ----         |                          |
| 10/13/54                          | 17.6                  | 16.6         | 17.6          | 1.53          | 1.74          | 229        | ----         |                          | 9/10/54     | 13.2                  | 10.0         | 5.1           | 1.54          | 0.82          | 300+       | ----         |                          |
| 11/2/54                           | 12.7                  | 14.5         | 18.1          | 1.14          | 1.52          | 227        | ----         |                          | 10/29/54    | 25.8                  | 31.5         | 20.1          | 2.07          | 1.77          | 300        | ----         |                          |
| 2/17/55                           | 21.5                  | 13.5         | 20.2          | 1.94          | 1.34          | 271        | NT           |                          | 1/31/55     | 33.5                  | 31.1         | 30.1          | 2.69          | 2.56          | 262        | 0.77         |                          |
| 3/17/55                           | 12.9                  | 15.2         | 17.4          | 1.16          | 1.60          | 242        | NT           |                          | 2/28/55     | 32.0                  | 27.3         | 28.5          | 2.62          | 2.34          | 235        | 0.56         |                          |
| 4/21/55                           | 16.3                  | 15.9         | 18.5          | 1.47          | 1.57          | 232        | ----         |                          | 3/29/55     | 30.8                  | 27.3         | 25.2          | 2.48          | 2.24          | 293        | ----         |                          |
| 5/28/55                           | 9.3                   | 11.3         | 15.3          | 0.79          | 1.14          | 300+       | ----         |                          | 5/3/55      | 26.9                  | 22.7         | 25.0          | 2.16          | 1.87          | 300        | ----         |                          |
| Site 202, Hinds Co., Miss.        |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| Loring SIL/SIL (ML)               |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| 5/26/54                           | 19.1                  | 19.2         | 21.6          | 1.37          | 1.53          | 257        | ----         |                          | 5/26/54     | 21.5                  | 19.6         | 24.5          | 1.64          | 1.63          | 226        | ----         |                          |
| 9/10/54                           | 5.3                   | 4.2          | 9.1           | 0.40          | 0.39          | 300+       | ----         |                          | 3/24/54     | 6.1                   | 3.2          | 15.2          | 0.49          | 0.68          | 300+       | ----         |                          |
| 9/10/54                           | 5.1                   | 5.0          | 7.0           | 0.39          | 0.40          | 300+       | ----         |                          | 9/10/54     | 4.0                   | 3.5          | 15.0          | 0.30          | 0.71          | 300+       | ----         |                          |
| 10/29/54                          | 12.9                  | 6.6          | 6.4           | 0.38          | 0.53          | 300+       | ----         |                          | 10/29/54    | 9.0                   | 8.5          | 14.3          | 0.69          | 0.71          | 300+       | ----         |                          |
| 11/30/54                          | 9.0                   | 10.3         | 13.5          | 0.82          | 0.82          | 300+       | ----         |                          | 11/30/54    | 13.8                  | 12.2         | 15.3          | 1.05          | 1.02          | 300+       | ----         |                          |
| 1/31/55                           | 29.7                  | 27.5         | 28.0          | 2.17          | 2.19          | 135        | 0.45         |                          | 1/31/55     | 29.6                  | 27.3         | 27.7          | 2.26          | 2.28          | 172        | 0.65         |                          |
| 2/28/55                           | 27.5                  | 27.1         | 27.4          | 2.08          | 2.16          | 151        | 0.30         |                          | 2/28/55     | 28.2                  | 26.2         | 26.9          | 2.15          | 2.19          | 150        | 0.62         |                          |
| 3/28/55                           | 26.2                  | 27.4         | 24.3          | 1.98          | 2.19          | 195        |              |                          | 3/28/55     | 27.2                  | 24.2         | 24.1          | 2.07          | 2.02          | 178        |              |                          |
| 5/3/55                            | 19.2                  | 21.4         | 21.2          | 1.33          | 1.71          | 268        | ----         |                          | 5/3/55      | 21.0                  | 20.0         | 23.7          | 1.60          | 1.67          | 228        | ----         |                          |
| Site 204, Hinds Co., Miss.        |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| Folaya SIL/SIL (ML)               |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| 5/26/54                           | 25.0                  | 24.4         | 28.3          | 2.01          | 2.05          | 300        | ----         |                          | 5/26/54     | 26.4                  | 24.1         | 26.8          | 2.12          | 2.00          | 278        | ----         |                          |
| 9/10/54                           | 14.4                  | 8.7          | 8.2           | 1.16          | 0.73          | 300+       | ----         |                          | 3/24/54     | 15.5                  | 7.2          | 6.4           | 1.25          | 0.60          | 300+       | ----         |                          |
| 9/10/54                           | 4.2                   | 5.3          | 9.6           | 0.34          | 0.45          | 300+       | ----         |                          | 9/10/54     | 9.0                   | 6.3          | 6.4           | 0.64          | 0.52          | 300+       | ----         |                          |
| 10/29/54                          | 12.5                  | 9.3          | 10.2          | 1.00          | 0.73          | 300+       | ----         |                          | 10/29/54    | 16.4                  | 2.3          | 7.7           | 1.32          | 0.69          | 300+       | ----         |                          |
| 11/30/54                          | 16.4                  | 14.2         | 12.7          | 1.32          | 1.19          | 300+       | ----         |                          | 11/30/54    | 21.4                  | 14.4         | 8.1           | 1.72          | 1.19          | 300+       | ----         |                          |
| 1/31/55                           | 27.3                  | 25.3         | 27.3          | 2.19          | 2.13          | 300+       | NT           |                          | 1/31/55     | 28.4                  | 29.7         | 25.3          | 2.28          | 2.46          | 267        | 0.56         |                          |
| 2/28/55                           | 28.5                  | 25.7         | 28.2          | 2.29          | 2.16          | 300+       | NT           |                          | 2/28/55     | 29.4                  | 30.4         | 26.5          | 2.36          | 2.52          | 231        | 0.26         |                          |
| 3/28/55                           | 25.6                  | 25.3         | 28.3          | 2.06          | 2.13          | 300+       | ----         |                          | 3/28/55     | 30.5                  | 28.4         | 28.7          | 2.45          | 2.35          | 263        |              |                          |
| 5/3/55                            | 23.2                  | 23.3         | 26.3          | 1.87          | 1.96          | 300+       | ----         |                          | 5/3/55      | 28.9                  | 25.3         | 23.7          | 1.32          | 2.09          | 282        | ----         |                          |
| Site 206, Hinds Co., Miss.        |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| Olivier SIL/SIL (ML)              |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| 5/26/54                           | 19.1                  | 22.0         | 24.2          | 1.67          | 1.93          | 282        | ----         |                          | 5/26/54     | 28.2                  | 24.2         | 26.6          | 2.37          | 2.12          | 191        | ----         |                          |
| 9/10/54                           | 15.2                  | 12.2         | 14.1          | 1.33          | 1.07          | 300+       | ----         |                          | 3/24/54     | 11.2                  | 7.8          | 9.7           | 0.94          | 0.68          | 300+       | ----         |                          |
| 9/10/54                           | 6.2                   | 9.5          | 13.2          | 0.54          | 0.33          | 300+       | ----         |                          | 9/10/54     | 6.0                   | 7.7          | 10.2          | 0.50          | 0.57          | 300+       | ----         |                          |
| 10/29/54                          | 16.5                  | 12.4         | 13.5          | 1.45          | 1.09          | 300+       | ----         |                          | 10/29/54    | 14.3                  | 9.8          | 11.6          | 1.20          | 0.86          | 300+       | ----         |                          |
| 11/30/54                          | 21.6                  | 21.1         | 16.2          | 1.89          | 1.35          | 300+       | ----         |                          | 11/30/54    | 22.5                  | 21.2         | 15.7          | 1.59          | 1.55          | 300+       | ----         |                          |
| 1/31/55                           | 29.2                  | 30.5         | 27.5          | 2.56          | 2.67          | 204        | 0.52         |                          | 1/31/55     | 31.3                  | 29.9         | 30.0          | 2.13          | 2.62          | 165        | 0.62         |                          |
| 2/28/55                           | 29.7                  | 29.7         | 27.9          | 2.60          | 2.40          | 159        | 0.62         |                          | 2/28/55     | 33.3                  | 29.8         | 29.5          | 2.50          | 2.61          | 142        | 0.50         |                          |
| 3/28/55                           | 17.0                  | 30.5         | 22.6          | 1.56          | 1.30          | 300+       | ----         |                          | 3/28/55     | 27.7                  | 25.1         | 25.2          | 2.42          | 2.20          | 200        |              |                          |
| 5/3/55                            | 9.7                   | 16.2         | 22.6          | 0.25          | 1.47          | 300+       | ----         |                          | 5/3/55      | 26.6                  | 21.4         | 24.5          | 1.77          | 1.87          | 264        |              |                          |
| Site 207, Hinds Co., Miss.        |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| Grenada SIL/SIL (CL)              |                       |              |               |               |               |            |              |                          |             |                       |              |               |               |               |            |              |                          |
| 5/26/54                           | 19.1                  | 22.0         | 24.2          | 1.67          | 1.93          | 282        | ----         |                          | 5/26/54     | 28.2                  | 24.2         | 26.6          | 2.37          | 2.12          | 191        | ----         |                          |
| 9/10/54                           | 15.2                  | 12.2         | 14.1          | 1.33          | 1.07          | 300+       | ----         |                          | 3/24/54     | 11.2                  | 7.8          | 9.7           | 0.94          | 0.68          | 300+       | ----         |                          |
| 9/10/54                           | 6.2                   | 9.5          | 13.2          | 0.54          | 0.33          | 300+       | ----         |                          | 9/10/54     | 6.0                   | 7.7          | 10.2          | 0.50          | 0.57          | 300+       | ----         |                          |
| 10/29/54                          | 16.5                  | 12.4         | 13.5          | 1.45          | 1.09          | 300+       | ----         |                          | 10/29/54    | 14.3                  | 9.8          | 11.6          | 1.20          | 0.86          | 300+       | ----         |                          |
| 11/30/54                          | 21.6                  | 21.1         | 16.2          | 1.89          | 1.35          | 300+       | ----         |                          | 11/30/54    | 22.5                  | 21.2         | 15.7          | 1.59          | 1.55          | 300+       | ----         |                          |
| 1/31/55                           | 29.2                  | 30.5         | 27.5          | 2.56          | 2.67          | 204        | 0.52         |                          | 1/31/55     | 31.3                  | 29.9         | 30.0          | 2.13          | 2.62          | 165        | 0.62         |                          |
| 2/28/55                           | 29.7                  | 29.7         | 27.9          | 2.60          | 2.40          | 159        | 0.62         |                          | 2/28/55     | 33.3                  | 29.8         | 29.5          | 2.50          | 2.61          | 142        | 0.50         |                          |
| 3/28/55                           | 17.0                  | 30.5         | 22.6          | 1.56          | 1.30          | 300+       | ----         |                          | 3/28/55     | 27.7                  | 25.1         | 25.2          | 2.42          | 2.20          | 200        |              |                          |
| 5/3/55                            | 9.7                   | 16.2         | 22.6          | 0.25          | 1.47          | 300+       | ----         |                          | 5/3/55      | 26.6                  | 21.4         | 24.5          | 1.77          | 1.87          | 264        |              |                          |

(Continued)

Note NT = no test.



Table B3a (Continued)  
Southern Region (Continued)

| Soil Moisture Content  |      |      |      |      |      |      |      |          |      | Cone   |      | Remol-   |      | Depth  |      | Soil Moisture Content      |      |                            |      |                             |      |                             |      |  |      | Cone   |      | Remol-   |      | Depth                         |      |                               |        |                               |      |      |      |      |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|--|------|------|------|------|------|------|------|----------|------|--|------|--|------|--|------|----------------------------|------|----------------------------|------|-----------------------------|------|-----------------------------|------|--|------|--|------|--|------|-------------------------------|------|-------------------------------|--------|-------------------------------|------|------|------|------|------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|
| Percent Weight Basis   |      |      |      |      |      |      |      |          |      | Index  |      | ing  |      | to   |      | Percent Weight Basis       |      |                            |      |                             |      |                             |      |  |      | Index  |      | ing  |      | to                            |      |                               |        |                               |      |      |      |      |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| in./6 in.  |      |      |      |      |      |      |      |          |      | Index  |      | Index  |      | Water  |      | in./6 in.                  |      |                            |      |                             |      |                             |      |  |      | Index  |      | Index  |      | Water                         |      |                               |        |                               |      |      |      |      |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 0- to 4-in. 4- to 12-in. 12- to 24-in. 24- to 36-in. 36- to 60-in. |      |      |      |      |      |      |      |          |      | 0- to 4-in. 4- to 12-in. 12- to 24-in. 24- to 36-in. 36- to 60-in. |      | 0- to 4-in. 4- to 12-in. 12- to 24-in. 24- to 36-in. 36- to 60-in. |      | 0- to 4-in. 4- to 12-in. 12- to 24-in. 24- to 36-in. 36- to 60-in. |      |                            |      |                            |      |                             |      |                             |      | 0- to 4-in. 4- to 12-in. 12- to 24-in. 24- to 36-in. 36- to 60-in. |      | 0- to 4-in. 4- to 12-in. 12- to 24-in. 24- to 36-in. 36- to 60-in. |      | 0- to 4-in. 4- to 12-in. 12- to 24-in. 24- to 36-in. 36- to 60-in. |      |                               |      |                               |        |                               |      |      |      |      |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Sample Date  |      |      |      |      |      |      |      |          |      | Sample Date  |      | Sample Date  |      | Sample Date  |      | Sample Date                |      |                            |      |                             |      |                             |      |  |      | Sample Date  |      | Sample Date  |      | Sample Date                   |      |                               |        |                               |      |      |      |      |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Site 208, Hinds Co., Miss.   |      |      |      |      |      |      |      |          |      | Site 209, Hinds Co., Miss.   |      | Site 210, Scott Co., Miss.   |      | Site 211, Scott Co., Miss.   |      | Site 212, Scott Co., Miss. |      | Site 213, Scott Co., Miss. |      | Site 214, Newton Co., Miss. |      | Site 215, Newton Co., Miss. |      | Site 216, Newton Co., Miss.  |      | Site 217, Newton Co., Miss.  |      | Site 218, Newton Co., Miss.  |      | Site 219, Nottoway Co., Miss. |      | Site 220, Nottoway Co., Miss. |        | Site 221, Nottoway Co., Miss. |      |      |      |      |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Henry SIL/SICL (CL)  |      |      |      |      |      |      |      |          |      | Calloway, SIL/SIL (CL-ML)  |      | Okfuskee, CL/C (CH)  |      | Valden SIL/SICL (CH)   |      | Eutaw SIL/SICL (CL)        |      | Mantachie SIL/SIL (SL)     |      | Tilden L/L (CH)             |      | Shacuta LS/SIL (SM-SG)      |      | Vaiden SIL/SICL (CH)   |      | Sasquehanna SIL/SICL (CL)  |      | Brackville CL/SICL (CH)  |      | Hunt SIL/SICL (CH)            |      |                               |        |                               |      |      |      |      |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 5/26/54  | 20.2 | 13.0 | 14.1 | 1.77 | 1.99 | 176  | ---- | 5/26/54  | 27.1 | 14.3   | 15.3 | 2.13   | 1.35 | 171  | ---- | 7/21/54                    | 16.7 | 12.6                       | 12.9 | 1.54                        | 1.32 | 263                         | ---- | 7/21/54  | 19.6 | 21.2   | 20.7 | 1.79   | 1.93 | 272                           | ---- | 7/21/54                       | 15.0   | 20.3                          | 21.4 | 1.35 | 1.88 | 300  | ---- |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 7/2/54   | 15.3 | 12.5 | 14.9 | 1.34 | 1.09 | 300+ | ---- | 5/26/54  | 11.3 | 7.7  | 1.7  | 0.33   | 0.59 | 300+   | ---- | 9/24/54                    | 16.0 | 23.5                       | 22.8 | 1.42                        | 1.10 | 300                         | ---- | 9/24/54  | 16.7 | 15.7   | 17.4 | 1.52   | 1.43 | 300                           | ---- | 9/24/54                       | 13.5   | 17.3                          | 23.1 | 1.66 | 1.57 | 300+ | ---- |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 9/10/54  | 13.1 | 12.0 | 14.0 | 1.21 | 1.04 | 300+ | ---- | 9/10/54  | 14.1 | 11.6   | 1.3  | 1.11   | 0.88 | 300+   | ---- | 9/10/54                    | 4.8  | 7.2                        | 12.1 | 0.47                        | 0.75 | 300+                        | ---- | 9/10/54  | 10.1 | 15.0   | 19.1 | 0.92   | 1.37 | 300+                          | ---- | 9/10/54                       | 4.3    | 12.0                          | 20.1 | 0.43 | 1.09 | 300+ | ---- |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 10/20/54   | 17.6 | 12.5 | 15.1 | 1.54 | 1.08 | 300+ | ---- | 10/20/54 | 9.6  | 8.2  | 8.0  | 0.75   | 0.62 | 300+   | ---- | 11/30/54                   | 21.1 | 18.1                       | 18.1 | 2.08                        | 1.87 | 218                         | ---- | 11/30/54   | 26.6 | 25.7   | 20.7 | 2.43   | 2.34 | 234                           | ---- | 11/13/54                      | 14.9   | 20.1                          | 17.3 | 1.39 | 1.83 | 300+ | ---- |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 11/30/54   | 23.5 | 21.1 | 19.5 | 2.06 | 1.32 | 300+ | ---- | 11/30/54 | 20.4 | 12.3   | 11.2 | 1.60   | 0.94 | 300+   | ---- | 1/31/55                    | 24.0 | 31.9                       | 33.3 | 2.13                        | 2.95 | 140                         | 1.33 | 1/31/55  | 27.2 | 26.0   | 28.6 | 2.48   | 2.37 | 126                           | 1.00 | 1/31/55                       | 15.3   | 19.4                          | 26.3 | 1.29 | 1.75 | 256  | NT   |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 1/31/55  | 21.3 | 22.0 | 32.5 | 2.74 | 2.76 | 112  | 0.66 | 1/31/55  | 30.2 | 30.0   | 29.6 | 2.37   | 2.29 | 130  | 0.46 | 2/28/55                    | 39.3 | 29.0                       | 31.1 | 2.47                        | 2.51 | 102                         | 0.60 | 2/28/55  | 26.9 | 26.0   | 27.2 | 2.45   | 2.37 | 127                           | 1.26 | 2/28/55                       | 14.8   | 18.4                          | 26.4 | 1.24 | 1.66 | 235  | NT   |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 2/28/55  | 29.3 | 29.0 | 31.1 | 2.47 | 2.51 | 102  | 0.59 | 2/28/55  | 18.3 | 33.3   | 32.9 | 3.05   | 2.54 | 75   | 0.48 | 3/28/55                    | 28.0 | 25.5                       | 29.5 | 2.45                        | 2.29 | 171                         | ---- | 3/28/55  | 22.3 | 25.0   | 25.1 | 2.03   | 2.23 | 170                           | ---- | 3/28/55                       | 10.5   | 16.7                          | 27.4 | 0.86 | 1.50 | 287  | ---- |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 3/28/55  | 28.0 | 25.5 | 29.5 | 2.45 | 2.29 | 171  | ---- | 3/28/55  | 32.4 | 30.7   | 31.3 | 2.55   | 2.34 | 90   | ---- | 5/3/55                     | 20.7 | 25.0                       | 30.3 | 1.81                        | 2.15 | 209                         | ---- | 5/3/55   | 13.3 | 20.0   | 25.5 | 2.53   | 1.46 | 1.97                          | 263  | ----                          | 5/3/55 | 5.5                           | 9.3  | 24.1 | 0.46 | 0.84 | 300  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 5/3/55   | 20.7 | 25.0 | 30.3 | 1.81 | 2.15 | 209  | ---- | 5/3/55   | 29.2 | 26.3   | 27.1 | 2.30   | 2.00 | 175  | ---- |                            |      |                            |      |                             |      |                             |      |  |      |  |      |  |      |                               |      |                               |        |                               |      |      |      |      |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |



Southern Region (Continued)

| Soil Moisture Content           |       |       |        |       |       |        |       |          |        |       | Remold- |        | Soil Moisture Content |       |        |          |       |        |       |       |        |       |       | Remold-  |       |       |        |       |       |        |       |          |                                |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------|-------|-------|--------|-------|-------|--------|-------|----------|--------|-------|---------|--------|-----------------------|-------|--------|----------|-------|--------|-------|-------|--------|-------|-------|----------|-------|-------|--------|-------|-------|--------|-------|----------|--------------------------------|-------|-------|--------|-------|-------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Percent Weight Basis            |       |       |        |       |       |        |       |          |        |       | ing     |        | Percent Weight Basis  |       |        |          |       |        |       |       |        |       |       | ing      |       |       |        |       |       |        |       |          |                                |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| in./6 in.                       |       |       |        |       |       |        |       |          |        |       | Index   |        | in./6 in.             |       |        |          |       |        |       |       |        |       |       | Index    |       |       |        |       |       |        |       |          |                                |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sample                          | 0- to | 6- to | 12- to | 0- to | 6- to | 12- to | 0- to | 6- to    | 12- to | 6- to | Depth   | Sample | 0- to                 | 6- to | 12- to | 0- to    | 6- to | 12- to | 6- to | Depth | Sample | 0- to | 6- to | 12- to   | 0- to | 6- to | 12- to | 6- to | Depth | Sample | 0- to | 6- to    | 12- to                         | 0- to | 6- to | 12- to | 6- to | Depth |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Date                            | Depth | Depth | Depth  | Depth | Depth | Depth  | Depth | Depth    | Depth  | in.   | Date    | Depth  | Depth                 | Depth | Depth  | Depth    | Depth | Depth  | Depth | in.   | Date   | Depth | Depth | Depth    | Depth | Depth | Depth  | Depth | in.   | Date   | Depth | Depth    | Depth                          | Depth | Depth | in.    |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 222, Oktibbeha Co., Miss.  |       |       |        |       |       |        |       |          |        |       |         |        |                       |       |        |          |       |        |       |       |        |       |       |          |       |       |        |       |       |        |       |          | Site 223, Oktibbeha Co., Miss. |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kaufman L/L (CL)                |       |       |        |       |       |        |       |          |        |       |         |        |                       |       |        |          |       |        |       |       |        |       |       |          |       |       |        |       |       |        |       |          | Lesper L/CL (CL)               |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/13/54                         | 10.9  | 12.2  | 13.6   | 0.99  | 1.20  | 300+   | ----  | 7/13/54  | 21.7   | 19.7  | 20.8    | 1.30   | 1.96                  | 300+  | ----   | 7/13/54  | 11.6  | 16.9   | 19.5  | 0.98  | 1.49   | 300+  | ----  | 7/13/54  | 6.4   | 5.8   | 7.3    | 0.59  | 0.57  | 300+   | ----  | 7/13/54  | 11.9                           | 14.9  | 15.7  | 1.01   | 1.31  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/10/54                         | 7.1   | 7.6   | 10.0   | 0.54  | 0.75  | 300+   | ----  | 8/10/54  | 12.3   | 15.0  | 15.6    | 1.02   | 1.41                  | 300+  | ----   | 8/10/54  | 11.9  | 14.9   | 15.7  | 1.01  | 1.31   | 300+  | ----  | 8/10/54  | 3.6   | 3.6   | 2.3    | 0.33  | 0.35  | 300+   | ----  | 8/10/54  | 5.6                            | 10.5  | 12.0  | 0.50   | 1.00  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                         | 10.0  | 10.9  | 10.4   | 0.91  | 1.07  | 300+   | ----  | 9/13/54  | 10.0   | 10.9  | 10.4    | 0.91   | 1.07                  | 300+  | ----   | 9/13/54  | 11.2  | 12.7   | 14.4  | 0.95  | 1.12   | 300+  | ----  | 9/13/54  | 2.3   | 4.4   | 6.6    | 0.21  | 0.43  | 300+   | ----  | 9/13/54  | 3.4                            | 8.7   | 11.9  | 0.31   | 0.82  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/13/54                        | 20.4  | 13.9  | 17.0   | 1.85  | 1.86  | 259    | ----  | 12/13/54 | 20.4   | 13.9  | 17.0    | 1.85   | 1.86                  | 259   | ----   | 12/13/54 | 17.9  | 15.3   | 12.5  | 1.64  | 1.79   | 300+  | ----  | 12/13/54 | 20.8  | 20.1  | 18.8   | 1.87  | 1.91  | 205    | ----  | 12/13/54 | 20.8                           | 20.1  | 18.8  | 1.87   | 1.91  | 205   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/1/55                          | 21.8  | 19.4  | 23.5   | 1.98  | 1.91  | 219    | 0.90  | 2/1/55   | 28.4   | 26.5  | 25.9    | 2.35   | 2.50                  | 132   | 0.98   | 2/1/55   | 19.0  | 21.9   | 23.5  | 1.74  | 2.14   | 123   | 0.42  | 2/1/55   | 21.4  | 21.5  | 25.3   | 1.93  | 2.04  | 192    | 0.88  | 2/1/55   | 21.4                           | 21.5  | 25.3  | 1.93   | 2.04  | 192   | 0.88 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/1/55                          | 13.5  | 18.0  | 21.3   | 1.68  | 1.77  | 222    | 1.15  | 3/1/55   | 27.7   | 28.2  | 28.2    | 2.29   | 2.66                  | 105   | 1.22   | 3/1/55   | 18.2  | 21.0   | 24.2  | 1.67  | 2.05   | 112   | 0.44  | 3/1/55   | 20.6  | 19.6  | 22.5   | 1.85  | 1.86  | 182    | 0.94  | 3/1/55   | 21.5                           | 21.3  | 24.2  | 1.94   | 2.02  | 212   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/29/55                         | 19.4  | 13.2  | 20.6   | 1.76  | 1.79  | 256    | ----  | 3/29/55  | 25.9   | 25.4  | 26.7    | 2.14   | 2.39                  | 121   | ----   | 3/29/55  | 21.2  | 20.3   | 21.4  | 1.95  | 1.99   | 160   | ----  | 3/29/55  | 21.5  | 21.3  | 24.2   | 1.94  | 2.02  | 212    | ----  | 3/29/55  | 21.5                           | 21.3  | 24.2  | 1.94   | 2.02  | 212   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/19/55                         | 8.7   | 11.3  | 12.9   | 0.79  | 1.11  | 300+   | ----  | 5/19/55  | 20.3   | 26.5  | 26.2    | 1.68   | 2.50                  | 300+  | ----   | 5/19/55  | 18.0  | 17.6   | 20.3  | 1.65  | 1.72   | 213   | ----  | 5/19/55  | 15.8  | 18.7  | 21.9   | 1.42  | 1.77  | 267    | ----  | 5/19/55  | 15.8                           | 18.7  | 21.9  | 1.42   | 1.77  | 267   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 224, Webster Co., Miss.    |       |       |        |       |       |        |       |          |        |       |         |        |                       |       |        |          |       |        |       |       |        |       |       |          |       |       |        |       |       |        |       |          | Site 225, Webster Co., Miss.   |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bataw SIL/SIL (CL)              |       |       |        |       |       |        |       |          |        |       |         |        |                       |       |        |          |       |        |       |       |        |       |       |          |       |       |        |       |       |        |       |          | Bataw SIL/SIL (CL)             |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/13/54                         | 13.6  | 14.4  | 13.7   | 0.87  | 1.21  | 300+   | ----  | 7/13/54  | 11.6   | 16.9  | 19.5    | 0.98   | 1.49                  | 300+  | ----   | 7/13/54  | 11.6  | 16.9   | 19.5  | 0.98  | 1.49   | 300+  | ----  | 7/13/54  | 11.6  | 16.9  | 19.5   | 0.98  | 1.49  | 300+   | ----  | 7/13/54  | 11.6                           | 16.9  | 19.5  | 0.98   | 1.49  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/10/54                         | 12.3  | 17.4  | 17.1   | 0.79  | 1.46  | 300+   | ----  | 8/10/54  | 11.9   | 14.9  | 15.7    | 1.01   | 1.31                  | 300+  | ----   | 8/10/54  | 11.9  | 14.9   | 15.7  | 1.01  | 1.31   | 300+  | ----  | 8/10/54  | 11.9  | 14.9  | 15.7   | 1.01  | 1.31  | 300+   | ----  | 8/10/54  | 11.9                           | 14.9  | 15.7  | 1.01   | 1.31  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                         | 11.9  | 13.9  | 15.3   | 0.76  | 1.17  | 300+   | ----  | 9/13/54  | 11.2   | 12.7  | 14.4    | 0.95   | 1.12                  | 300+  | ----   | 9/13/54  | 11.2  | 12.7   | 14.4  | 0.95  | 1.12   | 300+  | ----  | 9/13/54  | 11.2  | 12.7  | 14.4   | 0.95  | 1.12  | 300+   | ----  | 9/13/54  | 11.2                           | 12.7  | 14.4  | 0.95   | 1.12  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/13/54                        | 36.6  | 29.6  | 28.5   | 2.35  | 2.49  | 154    | ----  | 12/13/54 | 30.5   | 30.3  | 27.7    | 2.58   | 2.67                  | 145   | ----   | 12/13/54 | 30.5  | 30.3   | 27.7  | 2.58  | 2.67   | 145   | ----  | 12/13/54 | 30.5  | 30.3  | 27.7   | 2.58  | 2.67  | 145    | ----  | 12/13/54 | 30.5                           | 30.3  | 27.7  | 2.58   | 2.67  | 145   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/1/55                          | 33.7  | 32.0  | 30.8   | 2.16  | 2.69  | 138    | 0.86  | 2/1/55   | 31.9   | 30.9  | 31.1    | 2.70   | 2.73                  | 137   | 0.61   | 2/1/55   | 31.9  | 30.9   | 31.1  | 2.70  | 2.73   | 137   | 0.61  | 2/1/55   | 31.9  | 30.9  | 31.1   | 2.70  | 2.73  | 137    | 0.61  | 2/1/55   | 31.9                           | 30.9  | 31.1  | 2.70   | 2.73  | 137   | 0.61 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/1/55                          | 34.6  | 30.1  | 30.0   | 2.22  | 2.53  | 126    | 0.84  | 3/1/55   | 34.2   | 29.7  | 28.9    | 2.39   | 2.62                  | 129   | 0.72   | 3/1/55   | 34.2  | 29.7   | 28.9  | 2.39  | 2.62   | 129   | 0.72  | 3/1/55   | 34.2  | 29.7  | 28.9   | 2.39  | 2.62  | 129    | 0.72  | 3/1/55   | 34.2                           | 29.7  | 28.9  | 2.39   | 2.62  | 129   | 0.72 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/29/55                         | 26.1  | 30.1  | 27.1   | 1.53  | 2.53  | 136    | ----  | 3/29/55  | 31.4   | 32.4  | 31.1    | 2.66   | 2.86                  | 127   | ----   | 3/29/55  | 31.4  | 32.4   | 31.1  | 2.66  | 2.86   | 127   | ----  | 3/29/55  | 31.4  | 32.4  | 31.1   | 2.66  | 2.86  | 127    | ----  | 3/29/55  | 31.4                           | 32.4  | 31.1  | 2.66   | 2.86  | 127   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/19/55                         | 20.4  | 23.8  | 23.3   | 1.31  | 2.00  | 223    | ----  | 5/19/55  | 19.6   | 26.2  | 25.5    | 1.66   | 2.31                  | 157   | ----   | 5/19/55  | 19.6  | 26.2   | 25.5  | 1.66  | 2.31   | 157   | ----  | 5/19/55  | 19.6  | 26.2  | 25.5   | 1.66  | 2.31  | 157    | ----  | 5/19/55  | 19.6                           | 26.2  | 25.5  | 1.66   | 2.31  | 157   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 226, Webster Co., Miss.    |       |       |        |       |       |        |       |          |        |       |         |        |                       |       |        |          |       |        |       |       |        |       |       |          |       |       |        |       |       |        |       |          | Site 227, Pontotoc Co., Miss.  |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Geiger SIL/SIL (CL)             |       |       |        |       |       |        |       |          |        |       |         |        |                       |       |        |          |       |        |       |       |        |       |       |          |       |       |        |       |       |        |       |          | Palmer SIL/SIL (CL-M)          |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/13/54                         | 15.5  | 19.3  | 21.1   | 1.38  | 1.61  | 300+   | ----  | 7/13/54  | 6.4    | 5.8   | 7.3     | 0.59   | 0.57                  | 300+  | ----   | 7/13/54  | 6.4   | 5.8    | 7.3   | 0.59  | 0.57   | 300+  | ----  | 7/13/54  | 6.4   | 5.8   | 7.3    | 0.59  | 0.57  | 300+   | ----  | 7/13/54  | 6.4                            | 5.8   | 7.3   | 0.59   | 0.57  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/10/54                         | 13.3  | 20.1  | 20.1   | 1.11  | 1.68  | 300+   | ----  | 8/10/54  | 3.6    | 3.6   | 2.3     | 0.33   | 0.35                  | 300+  | ----   | 8/10/54  | 3.6   | 3.6    | 2.3   | 0.33  | 0.35   | 300+  | ----  | 8/10/54  | 3.6   | 3.6   | 2.3    | 0.33  | 0.35  | 300+   | ----  | 8/10/54  | 3.6                            | 3.6   | 2.3   | 0.33   | 0.35  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                         | 10.5  | 13.4  | 17.2   | 0.88  | 1.12  | 300+   | ----  | 9/13/54  | 2.3    | 4.4   | 6.6     | 0.21   | 0.43                  | 300+  | ----   | 9/13/54  | 2.3   | 4.4    | 6.6   | 0.21  | 0.43   | 300+  | ----  | 9/13/54  | 2.3   | 4.4   | 6.6    | 0.21  | 0.43  | 300+   | ----  | 9/13/54  | 2.3                            | 4.4   | 6.6   | 0.21   | 0.43  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/13/54                        | 32.5  | 34.8  | 35.6   | 2.71  | 2.90  | 115    | ----  | 12/13/54 | 17.9   | 15.3  | 12.5    | 1.64   | 1.79                  | 300+  | ----   | 12/13/54 | 17.9  | 15.3   | 12.5  | 1.64  | 1.79   | 300+  | ----  | 12/13/54 | 17.9  | 15.3  | 12.5   | 1.64  | 1.79  | 300+   | ----  | 12/13/54 | 17.9                           | 15.3  | 12.5  | 1.64   | 1.79  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/1/55                          | 32.7  | 34.3  | 35.4   | 2.73  | 2.86  | 94     | 0.96  | 2/1/55   | 19.0   | 21.9  | 23.5    | 1.74   | 2.14                  | 123   | 0.42   | 2/1/55   | 19.0  | 21.9   | 23.5  | 1.74  | 2.14   | 123   | 0.42  | 2/1/55   | 19.0  | 21.9  | 23.5   | 1.74  | 2.14  | 123    | 0.42  | 2/1/55   | 19.0                           | 21.9  | 23.5  | 1.74   | 2.14  | 123   | 0.42 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/1/55                          | 36.0  | 33.7  | 34.9   | 3.00  | 2.81  | 91     | 0.77  | 3/1/55   | 18.2   | 21.0  | 24.2    | 1.67   | 2.05                  | 112   | 0.44   | 3/1/55   | 18.2  | 21.0   | 24.2  | 1.67  | 2.05   | 112   | 0.44  | 3/1/55   | 18.2  | 21.0  | 24.2   | 1.67  | 2.05  | 112    | 0.44  | 3/1/55   | 18.2                           | 21.0  | 24.2  | 1.67   | 2.05  | 112   | 0.44 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/29/55                         | 32.1  | 33.0  | 36.5   | 2.68  | 2.75  | 122    | ----  | 3/29/55  | 21.2   | 20.3  | 21.4    | 1.95   | 1.99                  | 160   | ----   | 3/29/55  | 21.2  | 20.3   | 21.4  | 1.95  | 1.99   | 160   | ----  | 3/29/55  | 21.2  | 20.3  | 21.4   | 1.95  | 1.99  | 160    | ----  | 3/29/55  | 21.2                           | 20.3  | 21.4  | 1.95   | 1.99  | 160   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/19/55                         |       |       | Plowed |       |       |        | ----  | 5/19/55  | 18.0   | 17.6  | 20.3    | 1.65   | 1.72                  | 213   | ----   | 5/19/55  | 18.0  | 17.6   | 20.3  | 1.65  | 1.72   | 213   | ----  | 5/19/55  | 18.0  | 17.6  | 20.3   | 1.65  | 1.72  | 213    | ----  | 5/19/55  | 18.0                           | 17.6  | 20.3  | 1.65   | 1.72  | 213   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 228, Pontotoc Co., Miss.   |       |       |        |       |       |        |       |          |        |       |         |        |                       |       |        |          |       |        |       |       |        |       |       |          |       |       |        |       |       |        |       |          | Site 229, Pontotoc Co., Miss.  |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Palaya SIL/L (CL)               |       |       |        |       |       |        |       |          |        |       |         |        |                       |       |        |          |       |        |       |       |        |       |       |          |       |       |        |       |       |        |       |          | Scru SIL/SIL (CL)              |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/13/54                         | 11.9  | 12.7  | 13.0   | 1.04  | 1.15  | 300+   | ----  | 7/13/54  | 4.0    | 8.3   | 12.4    | 0.36   | 0.79                  | 300+  | ----   | 7/13/54  | 4.0   | 8.3    | 12.4  | 0.36  | 0.79   | 300+  | ----  | 7/13/54  | 4.0   | 8.3   | 12.4   | 0.36  | 0.79  | 300+   | ----  | 7/13/54  | 4.0                            | 8.3   | 12.4  | 0.36   | 0.79  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/10/54                         | 10.8  | 12.2  | 14.2   | 0.95  | 1.11  | 300+   | ----  | 8/10/54  | 5.6    | 10.5  | 12.0    | 0.50   | 1.00                  | 300+  | ----   | 8/10/54  | 5.6   | 10.5   | 12.0  | 0.50  | 1.00   | 300+  | ----  | 8/10/54  | 5.6   | 10.5  | 12.0   | 0.50  | 1.00  | 300+   | ----  | 8/10/54  | 5.6                            | 10.5  | 12.0  | 0.50   | 1.00  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                         | 9.1   | 10.8  | 12.3   | 0.30  | 0.93  | 300+   | ----  | 9/13/54  | 3.4    | 8.7   | 11.9    | 0.31   | 0.82                  | 300+  | ----   | 9/13/54  | 3.4   | 8.7    | 11.9  | 0.31  | 0.82   | 300+  | ----  | 9/13/54  | 3.4   | 8.7   | 11.9   | 0.31  | 0.82  | 300+   | ----  | 9/13/54  | 3.4                            | 8.7   | 11.9  | 0.31   | 0.82  | 300+  | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/13/54                        | 25.0  | 19.6  | 12.9   | 2.19  | 1.78  | 244    | ----  | 12/13/54 | 20.8   | 20.1  | 18.8    | 1.87   | 1.91                  | 205   | ----   | 12/13/54 | 20.8  | 20.1   | 18.8  | 1.87  | 1.91   | 205   | ----  | 12/13/54 | 20.8  | 20.1  | 18.8   | 1.87  | 1.91  | 205    | ----  | 12/13/54 | 20.8                           | 20.1  | 18.8  | 1.87   | 1.91  | 205   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/1/55                          | 29.3  | 26.1  | 25.0   | 2.48  | 2.36  | 124    | 0.92  | 2/1/55   | 21.4   | 21.5  | 25.3    | 1.93   | 2.04                  | 192   | 0.88   | 2/1/55   | 21.4  | 21.5   | 25.3  | 1.93  | 2.04   | 192   | 0.88  | 2/1/55   | 21.4  | 21.5  | 25.3   | 1.93  | 2.04  | 192    | 0.88  | 2/1/55   | 21.4                           | 21.5  | 25.3  | 1.93   | 2.04  | 192   | 0.88 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/1/55                          | 26.5  | 28.1  | 26.7   | 2.32  | 2.55  | 103    | 0.90  | 3/1/55   | 20.6   | 19.6  | 22.5    | 1.85   | 1.86                  | 182   | 0.94   | 3/1/55   | 20.6  | 19.6   | 22.5  | 1.85  | 1.86   | 182   | 0.94  | 3/1/55   | 20.6  | 19.6  | 22.5   | 1.85  | 1.86  | 182    | 0.94  | 3/1/55   | 20.6                           | 19.6  | 22.5  | 1.85   | 1.86  | 182   | 0.94 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/29/55                         | 26.5  | 23.9  | 25.1   | 2.32  | 2.16  | 132    | ----  | 3/29/55  | 21.5   | 21.3  | 24.2    | 1.94   | 2.02                  | 212   | ----   | 3/29/55  | 21.5  | 21.3   | 24.2  | 1.94  | 2.02   | 212   | ----  | 3/29/55  | 21.5  | 21.3  | 24.2   | 1.94  | 2.02  | 212    | ----  | 3/29/55  | 21.5                           | 21.3  | 24.2  | 1.94   | 2.02  | 212   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/19/55                         | 22.9  | 24.1  | 25.4   | 2.01  | 2.13  | 111    | ----  | 5/19/55  | 15.8   | 18.7  | 21.9    | 1.42   | 1.77                  | 267   | ----   | 5/19/55  | 15.8  | 18.7   | 21.9  | 1.42  | 1.77   | 267   | ----  | 5/19/55  | 15.8  | 18.7  | 21.9   | 1.42  | 1.77  | 267    | ----  | 5/19/55  | 15.8                           | 18.7  | 21.9  | 1.42   | 1.77  | 267   | ---- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Area cleared, timber cut before |       |       |        |       |       |        |       |          |        |       |         |        |                       |       |        |          |       |        |       |       |        |       |       |          |       |       |        |       |       |        |       |          |                                |       |       |        |       |       |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

(Continued)

Note: NT = no test.



Table B3a (Continued)  
Southern Region (Continued)

| Sample Date                   | Soil Moisture Content |              |               |             |              |               | Cone Index | Depth to Water Table in. | Sample Date | Soil Moisture Content |                     |               |             |              |               | Cone Index | Depth to Water Table in. |
|-------------------------------|-----------------------|--------------|---------------|-------------|--------------|---------------|------------|--------------------------|-------------|-----------------------|---------------------|---------------|-------------|--------------|---------------|------------|--------------------------|
|                               | Percent Weight Basis  |              |               | In./5 in.   |              |               |            |                          |             | Percent Weight Basis  |                     |               | In./5 in.   |              |               |            |                          |
|                               | 0- to 6-in.           | 6- to 12-in. | 12- to 18-in. | 0- to 6-in. | 6- to 12-in. | 12- to 18-in. |            |                          |             | 0- to 6-in.           | 6- to 12-in.        | 12- to 18-in. | 0- to 6-in. | 6- to 12-in. | 12- to 18-in. |            |                          |
| Site 235, McMurry Co., Tenn.  |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Oliver Sil/Sil (CL)           |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| 7/14/54                       | 3.6                   | 5.7          | 14.8          | 0.32        | 0.63         | 300+          | ----       | ----                     | 7/14/54     | 6.1                   | 11.6                | 13.0          | 0.49        | 1.04         | 300+          | ----       | ----                     |
| 8/11/54                       | 21.4                  | 20.6         | 22.8          | 1.93        | 1.94         | 214           | ----       | ----                     | 8/11/54     | 4.6                   | 8.7                 | 14.8          | 0.37        | 0.78         | 300+          | ----       | ----                     |
| 9/14/54                       | 5.0                   | 7.3          | 11.4          | 0.45        | 0.69         | 300+          | ----       | ----                     | 9/14/54     | 4.5                   | 10.9                | 14.9          | 0.36        | 0.98         | 300+          | ----       | ----                     |
| 12/13/54                      | 23.1                  | 21.4         | 19.4          | 2.08        | 2.02         | 183           | ----       | ----                     | 12/13/54    | 15.6                  | 17.1                | 19.0          | 1.25        | 1.54         | 273           | ----       | ----                     |
| 2/2/55                        | 26.8                  | 31.7         | 31.3          | 2.41        | 2.99         | 100           | 0.46       | 10                       | 2/2/55      | 22.8                  | 22.9                | 25.5          | 1.83        | 2.06         | 121           | 0.84       | ----                     |
| 3/2/55                        | 29.5                  | 29.0         | 30.6          | 2.56        | 2.73         | 95            | 0.32       | 10                       | 3/2/55      | 23.8                  | 23.7                | 26.3          | 1.91        | 2.13         | 147           | 0.71       | ----                     |
| 3/29/55                       | 32.1                  | 28.6         | 28.6          | 2.89        | 2.69         | 113           | ----       | 17                       | 3/29/55     | 23.5                  | 24.9                | 24.9          | 1.89        | 2.24         | 191           | ----       | ----                     |
| 5/19/55                       | 23.0                  | 19.9         | 23.3          | 2.07        | 1.87         | 212           | ----       | DRY                      | 5/19/55     | 11.0                  | 16.3                | 22.3          | 0.88        | 1.47         | 300           | ----       | ----                     |
| Site 237, McMurry Co., Tenn.  |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Lexington Sil/Sil (CL)        |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Site 238, Madison Co., Tenn.  |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Waverly Sil/Sil (CL)          |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| 7/15/54                       | 6.3                   | 9.4          | 10.6          | 0.51        | 0.81         | 300+          | ----       | ----                     | 7/15/54     | 1.6                   | 0.8                 | 0.7           | 0.14        | 0.08         | 300+          | ----       | ----                     |
| 8/11/54                       | 6.9                   | 10.9         | 9.4           | 0.55        | 0.94         | 300+          | ----       | ----                     | 8/11/54     | 2.3                   | 0.6                 | 1.9           | 0.21        | 0.06         | 300+          | ----       | ----                     |
| 9/14/54                       |                       |              | Plowed        |             |              |               | ----       | ----                     | 9/14/54     | 4.7                   | 2.5                 | 1.9           | 0.42        | 0.24         | 300+          | ----       | ----                     |
| 12/14/54                      | 25.3                  | 24.4         | 17.6          | 2.03        | 2.11         | 210           | ----       | ----                     | 12/14/54    | 15.1                  | 12.8                | 9.9           | 1.35        | 1.25         | 166           | ----       | ----                     |
| 2/2/55                        | 29.7                  | 27.3         | 24.6          | 2.39        | 2.35         | 235           | 0.76       | DRY                      | 2/2/55      | 16.2                  | 12.4                | 11.3          | 1.45        | 1.21         | 154           | NT         | ----                     |
| 3/2/55                        | 32.0                  | 30.2         | 28.9          | 2.57        | 2.61         | 160           | 0.46       | 9                        | 3/2/55      | 12.8                  | 9.1                 | 8.6           | 1.14        | 0.89         | 158           | NT         | ----                     |
| 3/29/55                       | 34.2                  | 32.3         | 29.0          | 2.75        | 2.79         | 155           | ----       | ----                     | 3/29/55     | 15.0                  | 11.3                | 8.0           | 1.34        | 1.11         | 199           | ----       | ----                     |
| 5/19/55                       | 24.5                  | 27.0         | 26.2          | 1.97        | 2.33         | 231           | ----       | DRY                      | 5/19/55     | 7.8                   | 6.3                 | 2.3           | 0.70        | 0.62         | 241           | ----       | ----                     |
| Site 240, Madison Co., Tenn.  |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Clinton Sil/Sil (CL)          |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| 7/15/54                       | 2.0                   | 5.7          | 10.4          | 0.20        | 0.59         | 300+          | ----       | ----                     | 7/15/54     | 1.8                   | 6.1                 | 13.7          | 0.16        | 0.59         | 300+          | ----       | ----                     |
| 8/11/54                       | 4.4                   | 10.4         | 13.3          | 0.43        | 1.07         | 300+          | ----       | ----                     | 8/11/54     | 2.2                   | 6.4                 | 13.8          | 0.20        | 0.61         | 300+          | ----       | ----                     |
| 9/14/54                       | 5.2                   | 9.7          | 14.1          | 0.51        | 1.00         | 300+          | ----       | ----                     | 9/14/54     | 1.3                   | 6.5                 | 14.8          | 0.16        | 0.62         | 300+          | ----       | ----                     |
| 12/14/54                      | 19.2                  | 20.8         | 18.3          | 1.89        | 2.15         | 255           | ----       | ----                     | 12/14/54    | 19.7                  | 21.8                | 20.3          | 1.78        | 2.09         | 300           | ----       | ----                     |
| 2/2/55                        | 19.9                  | 21.0         | 24.9          | 1.95        | 2.17         | 233           | 0.90       | ----                     | 2/2/55      | 23.8                  | 22.7                | 23.1          | 2.16        | 2.13         | 213           | 0.80       | ----                     |
| 3/2/55                        | 18.8                  | 20.9         | 21.2          | 1.35        | 2.16         | 235           | 0.94       | ----                     | 3/2/55      | 22.0                  | 22.9                | 23.9          | 1.99        | 2.20         | 253           | 0.62       | ----                     |
| 3/29/55                       | 18.0                  | 20.3         | 23.9          | 1.77        | 2.09         | 240           | ----       | ----                     | 3/29/55     | 18.3                  | 21.4                | 23.1          | 1.66        | 2.05         | 269           | ----       | ----                     |
| 5/19/55                       | 5.9                   | 12.5         | 17.5          | 0.57        | 1.30         | 300+          | ----       | ----                     | 5/19/55     | 13.8                  | 20.0                | 23.6          | 1.25        | 1.92         | 300           | ----       | ----                     |
| Plowed before 3/29/55         |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Site 242, Haywood Co., Tenn.  |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Grenada Sil/Sil (CL)          |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| 7/15/54                       | 4.3                   | 8.8          | 12.5          | 0.40        | 0.73         | 300+          | ----       | ----                     | 7/15/54     | 4.0                   | 7.3                 | 11.2          | 0.35        | 0.65         | 300+          | ----       | ----                     |
| 8/11/54                       | 4.3                   | 9.0          | 12.8          | 0.35        | 0.80         | 300+          | ----       | ----                     | 8/11/54     | 4.0                   | 5.5                 | 9.5           | 0.35        | 0.49         | 300+          | ----       | ----                     |
| 9/14/54                       | 7.7                   | 5.1          | 12.6          | 0.63        | 0.72         | 300+          | ----       | ----                     | 9/14/54     | 7.3                   | 6.2                 | 10.2          | 0.63        | 0.55         | 300+          | ----       | ----                     |
| 12/14/54                      | 25.6                  | 22.4         | 13.4          | 2.17        | 1.99         | 254           | ----       | ----                     | 12/14/54    | 23.0                  | 19.3                | 11.4          | 1.99        | 1.73         | 300+          | ----       | ----                     |
| 2/2/55                        | 30.9                  | 28.9         | 31.6          | 2.51        | 2.57         | 158           | 0.79       | ----                     | 2/2/55      | 25.1                  | 23.6                | 23.7          | 2.26        | 2.11         | 237           | 0.50       | ----                     |
| 3/2/55                        | 30.3                  | 27.3         | 27.3          | 2.47        | 2.42         | 148           | 0.60       | ----                     | 3/2/55      |                       | House built on area |               |             |              |               |            | ----                     |
| 3/29/55                       | 31.4                  | 24.1         | 26.7          | 2.56        | 2.50         | 133           | ----       | ----                     | 3/29/55     |                       |                     |               |             |              |               |            | ----                     |
| 5/20/55                       | 26.5                  | 25.5         | 27.6          | 2.16        | 2.26         | 184           | ----       | ----                     | 5/20/55     |                       |                     |               |             |              |               |            | ----                     |
| Site 244, Fayette Co., Tenn.  |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Memphis Sil/Sil (CL)          |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| 7/15/54                       | 6.6                   | 9.5          | 16.8          | 0.55        | 0.78         | 300+          | ----       | ----                     | 7/15/54     | 9.8                   | 12.7                | 14.4          | 0.75        | 1.12         | 300+          | ----       | ----                     |
| 8/11/54                       | 13.7                  | 14.4         | 13.4          | 1.13        | 1.18         | 300+          | ----       | ----                     | 8/11/54     | 19.4                  | 19.3                | 16.2          | 1.48        | 1.70         | 300+          | ----       | ----                     |
| 9/14/54                       | 4.9                   | 9.5          | 14.0          | 0.40        | 0.73         | 300+          | ----       | ----                     | 9/14/54     | 8.6                   | 10.8                | 13.1          | 0.66        | 0.95         | 300+          | ----       | ----                     |
| 12/14/54                      | 21.5                  | 17.6         | 17.6          | 1.78        | 1.45         | 277           | ----       | ----                     | 12/14/54    | 33.8                  | 28.3                | 29.8          | 2.58        | 2.50         | 300+          | ----       | ----                     |
| 2/2/55                        | 29.3                  | 26.8         | 25.4          | 2.43        | 2.20         | 147           | 0.57       | ----                     | 2/2/55      | 34.7                  | 31.4                | 31.9          | 2.64        | 2.77         | 281           | 0.36       | 0                        |
| 3/2/55                        | 24.9                  | 25.5         | 23.1          | 2.06        | 2.10         | 151           | 0.72       | ----                     | 3/2/55      | 35.0                  | 29.7                | 31.7          | 2.67        | 2.62         | 281           | 0.70       | 1                        |
| 3/29/55                       | 26.6                  | 25.7         | 23.0          | 2.20        | 2.11         | 172           | ----       | ----                     | 3/29/55     | 38.0                  | 30.3                | 31.5          | 2.90        | 2.67         | 300           | ----       | 8                        |
| 5/20/55                       | 20.1                  | 20.3         | 25.5          | 1.66        | 1.71         | 215           | ----       | ----                     | 5/20/55     | 30.3                  | 24.3                | 27.0          | 2.35        | 2.14         | 300           | ----       | DRY                      |
| Site 246, Marshall Co., Miss. |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Calloway Sil/Sil (CL)         |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| 7/15/54                       | 14.3                  | 6.4          | 4.4           | 1.29        | 0.54         | 300+          | ----       | ----                     | 7/15/54     | 4.2                   | 10.8                | 16.8          | 0.37        | 0.96         | 300+          | ----       | ----                     |
| 8/11/54                       | 9.9                   | 11.4         | 14.0          | 0.83        | 0.96         | 300+          | ----       | ----                     | 8/11/54     | 9.1                   | 12.3                | 15.2          | 0.81        | 1.14         | 300+          | ----       | ----                     |
| 9/14/54                       | 3.9                   | 3.6          | 12.8          | 0.35        | 0.73         | 300+          | ----       | ----                     | 9/14/54     | 3.8                   | 11.4                | 14.7          | 0.34        | 1.04         | 300+          | ----       | ----                     |
| 12/14/54                      | 26.2                  | 25.7         | 27.9          | 2.35        | 2.26         | 191           | ----       | ----                     | 12/14/54    | 26.1                  | 25.7                | 29.0          | 2.32        | 2.28         | 175           | ----       | ----                     |
| 2/2/55                        | 25.7                  | 30.5         | 32.9          | 2.40        | 2.59         | 198           | 0.51       | ----                     | 2/2/55      | 29.7                  | 30.9                | 34.3          | 2.64        | 2.74         | 155           | 0.68       | ----                     |
| 3/2/55                        | 26.9                  | 29.8         | 32.2          | 2.42        | 2.52         | 190           | 0.59       | ----                     | 3/2/55      | 27.5                  | 31.7                | 30.2          | 2.44        | 2.55         | 167           | 0.70       | ----                     |
| 3/29/55                       | 27.7                  | 28.6         | 32.5          | 2.49        | 2.42         | 179           | ----       | ----                     | 3/29/55     | 31.1                  | 26.3                | 29.7          | 2.76        | 2.34         | 186           | ----       | ----                     |
| 5/20/55                       | 21.8                  | 21.7         | 27.5          | 1.95        | 1.34         | 267           | ----       | ----                     | 5/20/55     | 10.5                  | 13.0                | 22.1          | 0.91        | 1.50         | 285           | ----       | ----                     |
| Site 248, Marshall Co., Miss. |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Calloway Sil/Sil (CL)         |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| 7/15/54                       | 4.3                   | 9.4          | 10.5          | 0.35        | 0.32         | 300+          | ----       | ----                     | 7/15/54     | 6.3                   | 5.0                 | 10.2          | 0.60        | 0.71         | 300+          | ----       | ----                     |
| 8/11/54                       | 12.2                  | 12.8         | 10.4          | 1.08        | 1.12         | 300+          | ----       | ----                     | 8/11/54     | 13.3                  | 13.6                | 11.4          | 1.18        | 1.21         | 300+          | ----       | ----                     |
| 9/14/54                       | 5.4                   | 3.3          | 10.5          | 0.48        | 0.77         | 300+          | ----       | ----                     | 9/14/54     | 7.9                   | 3.2                 | 3.4           | 0.70        | 0.73         | 300+          | ----       | ----                     |
| 12/14/54                      | 26.2                  | 27.4         | 25.7          | 2.31        | 2.40         | 167           | ----       | ----                     | 12/14/54    | 23.9                  | 27.0                | 22.0          | 2.11        | 2.40         | 300+          | ----       | ----                     |
| 2/2/55                        | 26.7                  | 30.7         | 30.8          | 2.35        | 2.69         | 166           | 0.71       | ----                     | 2/2/55      | 28.2                  | 29.0                | 30.1          | 2.50        | 2.58         | 198           | 0.62       | ----                     |
| 3/2/55                        | 27.5                  | 31.2         | 29.6          | 2.43        | 2.73         | 160           | 0.53       | ----                     | 3/2/55      | 35.1                  | 25.8                | 23.6          | 2.23        | 2.38         | 257           | 0.48       | ----                     |
| 3/29/55                       | 24.6                  | 27.1         | 28.4          | 2.17        | 2.37         | 169           | ----       | ----                     | 3/29/55     | 27.0                  | 26.4                | 28.5          | 2.40        | 2.34         | 217           | ----       | ----                     |
| 5/20/55                       | 11.2                  | 17.8         | 22.3          | 0.99        | 1.56         | 300           | ----       | ----                     | 5/20/55     | 13.1                  | 19.6                | 19.0          | 1.15        | 1.74         | 300           | ----       | ----                     |
| Site 249, Marshall Co., Miss. |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| Grenada Sil/Sil (CL)          |                       |              |               |             |              |               |            |                          |             |                       |                     |               |             |              |               |            |                          |
| 7/15/54                       | 4.3                   | 9.4          | 10.5          | 0.35        | 0.32         | 300+          | ----       | ----                     | 7/15/54     | 6.3                   | 5.0                 | 10.2          | 0.60        | 0.71         | 300+          | ----       | ----                     |
| 8/11/54                       | 12.2                  | 12.8         | 10.4          | 1.08        | 1.12         | 300+          | ----       | ----                     | 8/11/54     | 13.3                  | 13.6                | 11.4          | 1.18        | 1.21         | 300+          | ----       | ----                     |
| 9/14/54                       | 5.4                   | 3.3          | 10.5          | 0.48        | 0.77         | 300+          | ----       | ----                     | 9/14/54     | 7.9                   | 3.2                 | 3.4           | 0.70        | 0.73         | 300+          | ----       | ----                     |
| 12/14/54                      | 26.2                  | 27.4         | 25.7          | 2.31        | 2.40         | 167           | ----       | ----                     | 12/14/54    | 23.9                  | 27.0                | 22.0          | 2.11        | 2.40         | 300+          | ----       | ----                     |
| 2/2/55                        | 26.7                  | 30.7         | 30.8          | 2.35        | 2.69         | 166           | 0.71       | ----                     | 2/2/55      | 28.2                  | 29.0                | 30.1          | 2.50        | 2.58         | 198           | 0.62       | ----                     |
| 3/2/55                        | 27.5                  | 31.2         | 29.6          | 2.43        | 2.73         | 160           | 0.53       | ----                     | 3/2/55      | 35.1                  | 25.8                | 23.6          | 2.23        | 2.38         | 257           | 0.48       | ----                     |
| 3/29/55                       | 24.6                  | 27.1         | 28.4          | 2.17        | 2.37         | 169           | ----       | ----                     | 3/29/55     | 27.0                  | 26.4                | 28.5          | 2.40        | 2.34         | 217           | ----       | ----                     |
| 5/20/55                       | 11.2                  | 17.8         | 22.3          | 0.99        | 1.56         | 300           | ----       | ----                     | 5/20/55     | 13.1                  | 19.6                | 19.0          | 1.15        | 1.74         | 300           | ----       | ----                     |

(Continued)

Note. NT = no test.



Table B3a (Continued)  
Southern Region (Continued)

| Sample Date   | Soil Moisture Content |                    |                     |                     |                     |                     | Cone Index | Remold- ing Index | Depth to Water Table in. | Sample Date | Soil Moisture Content |                    |                     |                     |                     |                     | Cone Index | Remold- ing Index | Depth to Water Table in.                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|-----------------------|--------------------|---------------------|---------------------|---------------------|---------------------|------------|-------------------|--------------------------|-------------|-----------------------|--------------------|---------------------|---------------------|---------------------|---------------------|------------|-------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|   | Percent Weight Basis  |                    | in./5 in.           |                     | in./5 in.           |                     |            |                   |                          |             | Percent Weight Basis  |                    | in./5 in.           |                     | in./5 in.           |                     |            |                   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | 0- to 6-in. Depth     | 6- to 12-in. Depth | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth | 30- to 36-in. Depth |            |                   |                          |             | 0- to 6-in. Depth     | 6- to 12-in. Depth | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth | 30- to 36-in. Depth |            |                   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 250, Panola Co., Miss.<br>Loring SIL/SIL (CL)                                  |                       |                    |                     |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |                     |            |                   | Site 251, Panola Co., Miss.<br>Collins SIL/SIL (CL)     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/15/54   | 7.6                   | 15.2               | 15.7                | 0.2                 | 1.35                | 300+                | ----       | ----              | ----                     | 7/16/54     | 13.1                  | 14.6               | 25.7                | 1.01                | 1.17                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/12/54   | 5.0                   | 14.5               | 14.7                | 0.41                | 1.21                | 300+                | ----       | ----              | ----                     | 8/12/54     | 5.9                   | 6.8                | 14.7                | 0.46                | 0.55                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/14/54   | 5.1                   | 13.4               | 14.5                | 0.42                | 1.12                | 300+                | ----       | ----              | ----                     | 9/14/54     | 3.8                   | 3.9                | 7.3                 | 0.29                | 0.31                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/3/54   | 26.5                  | 24.8               | 17.7                | 2.17                | 2.07                | 231                 | ----       | ----              | ----                     | 12/3/54     | 21.4                  | 19.4               | 19.8                | 1.66                | 1.56                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/3/55  | 25.8                  | 26.3               | 26.8                | 2.11                | 2.19                | 198                 | 0.68       | ----              | ----                     | 2/3/55      | 24.5                  | 23.8               | 31.3                | 1.90                | 1.91                | 293                 | NT         | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/3/55  | 25.5                  | 26.4               | 26.7                | 2.17                | 2.20                | 173                 | 0.95       | ----              | ----                     | 3/3/55      | 28.4                  | 26.6               | 34.1                | 2.20                | 2.14                | 263                 | NT         | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/30/55   | 24.3                  | 24.4               | 25.5                | 1.98                | 2.03                | 177                 | ----       | ----              | ----                     | 3/30/55     | 31.4                  | 29.1               | 33.3                | 2.43                | 2.34                | 272                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/20/55   | 10.8                  | 19.4               | 24.0                | 0.83                | 1.62                | 300                 | ----       | ----              | ----                     | 5/20/55     | 20.5                  | 21.5               | 27.5                | 1.59                | 1.73                | 300                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 252, Panola Co., Miss.<br>Carroll SIL/SIL (CL)                                 |                       |                    |                     |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |                     |            |                   | Site 253, Panola Co., Miss.<br>Collins SIL/SIL (CL)     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/16/54   | 2.6                   | 10.3               | 11.5                | 0.21                | 0.85                | 300+                | ----       | ----              | ----                     | 7/16/54     | 9.1                   | 10.8               | 12.2                | 0.81                | 0.98                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/12/54   | 1.5                   | 9.4                | 10.4                | 0.12                | 0.78                | 300+                | ----       | ----              | ----                     | 8/12/54     | 8.2                   | 10.8               | 12.6                | 0.73                | 0.98                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/14/54   | 2.4                   | 6.1                | 11.7                | 0.19                | 0.51                | 300+                | ----       | ----              | ----                     | 9/14/54     | 5.2                   | 6.4                | 7.0                 | 0.46                | 0.58                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/3/54   | 22.6                  | 17.5               | 14.5                | 1.82                | 1.45                | 300+                | ----       | ----              | ----                     | 12/3/54     | 25.5                  | 24.9               | 22.0                | 2.25                | 2.26                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/3/55  | 26.9                  | 23.7               | 19.4                | 2.15                | 1.96                | 300+                | 0.86       | ----              | ----                     | 2/3/55      | 27.4                  | 25.5               | 25.8                | 2.43                | 2.31                | 300+                | 0.83       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/3/55  | 27.5                  | 24.6               | 19.2                | 2.21                | 2.04                | 243                 | NT         | ----              | ----                     | 3/3/55      | 25.7                  | 27.5               | 28.0                | 2.28                | 2.49                | 257                 | 0.36       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/30/55   | 26.5                  | 22.7               | 13.5                | 2.13                | 1.83                | 272                 | ----       | ----              | ----                     | 3/30/55     | 30.9                  | 30.2               | 29.8                | 2.74                | 2.74                | 242                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/20/55   | 5.2                   | 11.3               | 13.8                | 0.42                | 0.95                | 300+                | ----       | ----              | ----                     | 5/20/55     | 22.7                  | 23.4               | 24.4                | 2.02                | 2.12                | 290                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 254, Panola Co., Miss.<br>Memphis SIL/SIL (CL)                                 |                       |                    |                     |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |                     |            |                   | Site 255, Panola Co., Miss.<br>Olivier SIL/SIL (CL)     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/16/54   | 5.9                   | 12.4               | 14.4                | 0.54                | 1.09                | 300+                | ----       | ----              | ----                     | 7/16/54     | 5.3                   | 7.5                | 11.8                | 0.45                | 0.65                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/12/54   | 6.5                   | 12.4               | 14.9                | 0.59                | 1.09                | 300+                | ----       | ----              | ----                     | 8/12/54     | 3.6                   | 7.4                | 9.1                 | 0.31                | 0.64                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/14/54   | 6.9                   | 13.5               | 14.7                | 0.63                | 1.19                | 300+                | ----       | ----              | ----                     | 9/14/54     | 5.4                   | 6.7                | 7.6                 | 0.46                | 0.58                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/3/54   | 22.7                  | 23.8               | 17.4                | 2.07                | 2.03                | 235                 | ----       | ----              | ----                     | 12/3/54     | 22.8                  | 23.8               | 20.0                | 1.96                | 2.06                | 226                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/3/55  | 23.3                  | 29.0               | 29.1                | 2.12                | 2.45                | 277                 | NT         | ----              | ----                     | 2/3/55      | 26.6                  | 28.0               | 26.6                | 2.28                | 2.42                | 108                 | 0.49       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/3/55  | 21.1                  | 26.0               | 26.4                | 1.92                | 2.28                | 251                 | NT         | ----              | ----                     | 3/3/55      | 26.7                  | 27.4               | 25.3                | 2.29                | 2.37                | 145                 | 0.58       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/30/55   | 20.3                  | 27.0               | 28.2                | 1.85                | 2.37                | 244                 | ----       | ----              | ----                     | 3/30/55     | 29.6                  | 30.2               | 26.7                | 2.54                | 2.61                | 141                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/20/55   | 11.3                  | 16.0               | 16.3                | 1.03                | 1.40                | 300+                | ----       | ----              | ----                     | 5/20/55     | 11.9                  | 17.8               | 20.7                | 1.02                | 1.54                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 256, Panola Co., Miss.<br>Hymon SIL/SIL (CL)                                   |                       |                    |                     |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |                     |            |                   | Site 257, Quitman Co., Miss.<br>Dundee SIL/SIL (CL)     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/17/54   | 12.3                  | 9.9                | 10.2                | 1.08                | 0.88                | 300+                | ----       | ----              | ----                     | 7/17/54     | 12.4                  | 19.0               | 20.9                | 1.03                | 1.71                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/12/54   | 5.5                   | 7.8                | 5.6                 | 0.57                | 0.69                | 300+                | ----       | ----              | ----                     | 8/12/54     | 10.4                  | 20.1               | 18.1                | 0.87                | 1.81                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/14/54   | 5.5                   | 7.6                | 5.5                 | 0.48                | 0.67                | 300+                | ----       | ----              | ----                     | 9/14/54     | 10.9                  | 18.4               | 18.4                | 0.91                | 1.66                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/4/54   | 25.3                  | 20.5               | 20.3                | 2.22                | 1.82                | 300                 | ----       | ----              | ----                     | 12/4/54     | 23.7                  | 26.8               | 25.7                | 1.98                | 2.41                | 294                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/3/55  | 28.4                  | 22.2               | 19.7                | 2.49                | 1.97                | 209                 | NT         | ----              | ----                     | 2/3/55      | 25.2                  | 23.5               | 28.7                | 2.10                | 2.66                | 300                 | NT         | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/3/55  | 24.7                  | 20.5               | 15.4                | 2.16                | 1.82                | 222                 | NT         | ----              | ----                     | 3/3/55      | 21.6                  | 28.1               | 28.5                | 1.90                | 2.53                | 241                 | NT         | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/30/55   | 29.2                  | 26.9               | 24.4                | 2.56                | 2.39                | 138                 | ----       | ----              | ----                     | 3/30/55     | 26.4                  | 30.3               | 29.5                | 2.20                | 2.73                | 250                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/20/55   | 13.4                  | 15.6               | 14.5                | 1.17                | 1.39                | 236                 | ----       | ----              | ----                     | 5/20/55     | 25.1                  | 25.9               | 23.5                | 2.09                | 2.33                | 231                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Wood lot cleared, plowed and sowed in oats before 2/3/55.<br>Flooded before 3/30/55 |                       |                    |                     |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |                     |            |                   | Site 258, Quitman Co., Miss.<br>Forestdale SIL/SIL (CL) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/17/54   | 7.6                   | 18.4               | 18.6                | 0.67                | 1.59                | 300+                | ----       | ----              | ----                     | 7/17/54     | 48.7                  | 56.9               | 52.0                | 2.51                | 3.24                | 118                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/12/54   | 9.8                   | 20.1               | 20.0                | 0.86                | 1.35                | 300+                | ----       | ----              | ----                     | 8/12/54     | 37.2                  | 45.3               | 44.0                | 1.92                | 2.58                | 137                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/15/54   | 4.8                   | 11.4               | 17.0                | 0.42                | 1.05                | 300+                | ----       | ----              | ----                     | 9/15/54     | 32.5                  | 40.2               | 40.0                | 1.68                | 2.29                | 173                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/4/54   | 23.3                  | 26.0               | 25.1                | 2.06                | 2.39                | 293                 | ----       | ----              | ----                     | 12/4/54     | 43.1                  | 51.2               | 54.5                | 2.22                | 2.92                | 154                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/3/55  | 22.6                  | 28.0               | 28.3                | 1.99                | 2.57                | 296                 | NT         | ----              | ----                     | 2/3/55      | 48.7                  | 59.0               | 59.6                | 2.51                | 3.35                | 140                 | NT         | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/3/55  | 20.2                  | 27.1               | 27.0                | 1.78                | 2.49                | 238                 | NT         | ----              | ----                     | 3/3/55      | ----                  | ----               | ----                | ----                | ----                | ----                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/30/55   | 19.9                  | 28.6               | 25.7                | 1.76                | 2.63                | 248                 | ----       | ----              | ----                     | 3/30/55     | ----                  | ----               | ----                | ----                | ----                | ----                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/21/55   | 18.6                  | 27.2               | 28.8                | 1.64                | 2.50                | 224                 | ----       | ----              | ----                     | 5/21/55     | ----                  | ----               | ----                | ----                | ----                | ----                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 260, Quitman Co., Miss.<br>Sharkey SIL/C (CL)                                  |                       |                    |                     |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |                     |            |                   | Site 261, Quitman Co., Miss.<br>Dundee SIL/CL (CL)      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/17/54   | 13.2                  | 25.4               | 25.0                | 1.49                | 2.04                | 300+                | ----       | ----              | ----                     | 7/17/54     | 7.8                   | 16.3               | 14.9                | 0.72                | 1.50                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/12/54   | 19.6                  | 23.8               | 25.5                | 1.40                | 1.91                | 300+                | ----       | ----              | ----                     | 8/12/54     | 9.7                   | 17.0               | 15.0                | 0.90                | 1.56                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/15/54   | 15.4                  | 22.3               | 23.0                | 1.26                | 1.79                | 300+                | ----       | ----              | ----                     | 9/15/54     | 9.6                   | 12.9               | 15.3                | 0.89                | 1.18                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12/4/54   | 13.1                  | 38.4               | 40.3                | 2.70                | 3.09                | 221                 | ----       | ----              | ----                     | 12/4/54     | 26.1                  | 28.6               | 26.4                | 2.41                | 2.63                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/3/55  | 35.7                  | 40.7               | 40.4                | 2.91                | 3.27                | 139                 | NT         | ----              | ----                     | 2/3/55      | 23.8                  | 28.2               | 25.6                | 2.20                | 2.59                | 300                 | NT         | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/3/55  | 37.2                  | 40.3               | 42.8                | 2.97                | 3.24                | 102                 | NT         | ----              | ----                     | 3/3/55      | 24.5                  | 27.6               | 25.0                | 2.27                | 2.53                | 223                 | NT         | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/30/55   | 34.7                  | 40.7               | 42.3                | 2.83                | 3.27                | 108                 | ----       | ----              | ----                     | 3/30/55     | 22.0                  | 26.6               | 27.2                | 2.03                | 2.44                | 270                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/21/55   | 30.0                  | 33.6               | 35.8                | 2.45                | 2.70                | 91                  | ----       | ----              | ----                     | 5/21/55     | 20.1                  | 19.8               | 18.1                | 1.86                | 1.82                | 277                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 301, Washington Co., Ala.<br>Cuthbert SIL/CL (CL)                              |                       |                    |                     |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |                     |            |                   | Site 302, Washington Co., Ala.<br>Rains SIL/CL (CL)     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/21/54   | 4.3                   | 9.3                | 15.8                | 0.40                | 0.30                | 300+                | ----       | ----              | ----                     | 5/21/54     | 11.7                  | 11.4               | 9.7                 | 1.00                | 1.08                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/3/54  | 12.2                  | 18.6               | 17.4                | 1.13                | 1.80                | 237                 | ----       | ----              | ----                     | 8/3/54      | 12.9                  | 13.6               | 13.7                | 1.11                | 1.29                | 300                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/20/54   | 6.9                   | 8.8                | 12.3                | 0.64                | 0.65                | 300                 | ----       | ----              | ----                     | 9/20/54     | 7.5                   | 6.6                | 5.9                 | 0.64                | 0.63                | 300+                | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11/3/54   | 12.2                  | 21.1               | 15.9                | 1.13                | 2.04                | 300                 | ----       | ----              | ----                     | 11/3/54     | 17.0                  | 15.9               | 15.2                | 1.46                | 1.51                | 237                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1/17/55   | 17.2                  | 22.4               | 15.3                | 1.60                | 2.16                | 205                 | ----       | ----              | ----                     | 1/17/55     | 22.2                  | 17.9               | 23.8                | 1.90                | 1.70                | 128                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2/7/55  | 19.5                  | 19.1               | 19.0                | 1.82                | 1.85                | 161                 | 0.36       | ----              | ----                     | 2/7/55      | 24.5                  | 22.1               | 23.0                | 2.10                | 2.10                | 112                 | 0.35       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/7/55  | 14.8                  | 16.3               | 18.6                | 1.38                | 1.57                | 187                 | NT         | ----              | ----                     | 3/7/55      | 13.7                  | 21.0               | 23.2                | 1.60                | 1.99                | 133                 | 0.80       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4/4/55  | 14.5                  | 17.0               | 16.0                | 1.35                | 1.64                | 273                 | ----       | ----              | ----                     | 4/4/55      | 17.4                  | 19.4               | 20.0                | 1.49                | 1.84                | 209                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/16/55   | 8.2                   | 13.7               | 17.1                | 0.76                | 1.32                | 300                 | ----       | ----              | ----                     | 5/16/55     | 14.9                  | 13.7               | 15.6                | 1.28                | 1.30                | 232                 | ----       | ----              | ----  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

(Continued)

Note: NT = no test.



Table B3a (Continued)  
Southern Region (Continued)

| Sample Date                              | Soil Moisture Content |                    |                     |                     |                     | Cone Index | Remold- ing Index | Depth to Water Table in. | Sample Date | Soil Moisture Content |                    |                     |                     |                     | Cone Index | Remold- ing Index | Depth to Water Table in. |
|--|-----------------------|--------------------|---------------------|---------------------|---------------------|------------|-------------------|--------------------------|-------------|-----------------------|--------------------|---------------------|---------------------|---------------------|------------|-------------------|--------------------------|
|  | Percent Weight Basis  |                    |                     |                     |                     |            |                   |                          |             | Percent Weight Basis  |                    |                     |                     |                     |            |                   |                          |
|  | 0- to 6-in. Depth     | 6- to 12-in. Depth | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth |            |                   |                          |             | 0- to 6-in. Depth     | 6- to 12-in. Depth | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth |            |                   |                          |
| <b>Site 303, Washington Co., Ala.</b>    |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Lynchburg SL/SL (WL)</b>              |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| 6/21/54                                  | 14.0                  | 9.4                | 9.4                 | 1.13                | 0.95                | 300        | ----              | ----                     | 6/22/54     | 17.4                  | 20.5               | 25.2                | 1.46                | 1.82                | 300+       | ----              | ----                     |
| 8/3/54                                   | 17.1                  | 11.7               | 13.3                | 1.37                | 1.20                | 300        | ----              | ----                     | 8/3/54      | 19.3                  | 20.9               | 25.3                | 1.62                | 1.86                | 300+       | ----              | ----                     |
| 9/20/54                                  | 3.2                   | 4.1                | 5.9                 | 0.66                | 0.42                | 300+       | ----              | ----                     | 9/21/54     | 11.3                  | 12.1               | 15.3                | 0.35                | 1.07                | 300+       | ----              | ----                     |
| 11/9/54                                  | 13.8                  | 14.5               | 14.7                | 1.51                | 1.49                | 243        | ----              | ----                     | 11/9/54     | 22.3                  | 22.0               | 23.3                | 1.37                | 1.35                | 300        | ----              | ----                     |
| 1/17/55                                  | 30.1                  | 25.1               | 26.0                | 2.42                | 2.58                | 98         | ----              | 12                       | 1/17/55     | 31.3                  | 32.7               | 34.1                | 2.67                | 2.30                | 181        | ----              | ----                     |
| 2/7/55                                   | 12.1                  | 22.3               | 23.0                | 2.58                | 2.29                | 100        | 0.53              | DRY                      | 2/7/55      | 32.9                  | 28.6               | 31.3                | 2.76                | 2.54                | 172        | 0.88              | ----                     |
| 3/7/55                                   | 22.4                  | 16.9               | 18.7                | 1.80                | 1.73                | 169        | 0.60              | DRY                      | 3/7/55      | 23.5                  | 25.3               | 31.5                | 1.37                | 2.29                | 235        | NT                | ----                     |
| 4/4/55                                   | 22.0                  | 15.7               | 16.2                | 1.77                | 1.61                | 204        | ----              | DRY                      | 4/4/55      | 27.1                  | 26.0               | 27.5                | 2.29                | 2.31                | 281        | NT                | ----                     |
| 5/16/55                                  | 13.6                  | 9.9                | 14.1                | 1.09                | 1.02                | 300        | ----              | ----                     | 5/16/55     | 13.1                  | 17.1               | 19.9                | 1.10                | 1.52                | 300+       | ----              | ----                     |
| Plowed 1/17/55                           |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Site 305, Clark Co., Ala.</b>         |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Kershaw S/S (SM)</b>                  |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| 6/22/54                                  | 4.7                   | 3.8                | 4.4                 | 0.39                | 0.35                | 143        | ----              | ----                     | 6/22/54     | 11.4                  | 15.4               | 15.7                | 1.07                | 1.44                | 248        | ----              | ----                     |
| 8/3/54                                   | 7.1                   | 3.7                | 4.5                 | 0.58                | 0.34                | 142        | ----              | ----                     | 8/3/54      | 13.7                  | 17.3               | 18.4                | 1.29                | 1.52                | 252        | ----              | ----                     |
| 9/21/54                                  | 3.1                   | 1.3                | 1.6                 | 0.25                | 0.12                | 199        | ----              | ----                     | 9/21/54     | 7.0                   | 11.0               | 11.7                | 0.66                | 1.03                | 300+       | ----              | ----                     |
| 11/9/54                                  | 7.9                   | 7.0                | 6.9                 | 0.54                | 0.64                | 106        | ----              | ----                     | 11/9/54     | 14.6                  | 17.1               | 15.3                | 1.33                | 1.60                | 258        | ----              | ----                     |
| 1/17/55                                  | 11.0                  | 9.0                | 9.2                 | 0.30                | 0.93                | 106        | ----              | ----                     | 1/17/55     | 13.1                  | 19.7               | 21.4                | 1.71                | 1.34                | 179        | ----              | ----                     |
| 2/7/55                                   | 10.3                  | 9.0                | 8.5                 | 0.54                | 0.73                | 133        | 1.09*             | ----                     | 2/7/55      | 17.6                  | 21.4               | 21.7                | 1.60                | 2.00                | 149        | 0.99              | ----                     |
| 3/7/55                                   | 5.6                   | 5.7                | 4.9                 | 0.54                | 0.52                | 134        | NT                | ----                     | 3/7/55      | 9.9                   | 14.9               | 16.7                | 0.92                | 1.39                | 384        | NT                | ----                     |
| 4/4/55                                   | 7.3                   | 5.5                | 7.4                 | 0.60                | 0.50                | 148        | ----              | ----                     | 4/4/55      | 10.5                  | 13.0               | 15.0                | 1.00                | 1.22                | 300        | NT                | ----                     |
| 5/16/55                                  | 2.8                   | 0.7                | 0.5                 | 0.23                | 0.06                | 193        | ----              | ----                     | 5/16/55     | 7.4                   | 12.1               | 12.8                | 0.70                | 1.13                | 300+       | ----              | ----                     |
| <b>Site 306, Clark Co., Ala.</b>         |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Greenville L/CL (CL)</b>              |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| 6/22/54                                  | 5.0                   | 7.2                | 13.3                | 0.42                | 0.66                | 300+       | ----              | ----                     | 6/22/54     | 17.5                  | 6.9                | 4.6                 | 1.43                | 0.63                | 194        | ----              | ----                     |
| 8/3/54                                   | 10.4                  | 7.3                | 13.0                | 0.37                | 0.67                | 300        | ----              | ----                     | 8/3/54      | 12.6                  | 13.5               | 8.9                 | 1.03                | 1.22                | 190        | ----              | ----                     |
| 9/21/54                                  | 1.5                   | 2.7                | 9.3                 | 0.13                | 0.25                | 300+       | ----              | ----                     | 9/21/54     | 4.3                   | 2.8                | 1.3                 | 0.35                | 0.25                | 256        | ----              | ----                     |
| 11/9/54                                  | 7.6                   | 11.7               | 17.2                | 0.63                | 1.07                | 300+       | ----              | ----                     | 10/9/54     | 8.9                   | 9.5                | 3.0                 | 0.73                | 0.66                | 341        | ----              | ----                     |
| 1/17/55                                  | 15.2                  | 13.2               | 20.0                | 1.27                | 1.66                | 173        | ----              | ----                     | 1/17/55     | 16.2                  | 15.1               | 16.4                | 1.32                | 1.37                | 118        | ----              | ----                     |
| 2/7/55                                   | 14.4                  | 15.9               | 21.5                | 1.20                | 1.54                | 202        | NT                | ----                     | 2/7/55      | 19.3                  | 17.9               | 18.8                | 1.57                | 1.62                | 128        | 1.40*             | ----                     |
| 3/7/55                                   | 10.2                  | 12.9               | 19.3                | 0.35                | 1.18                | 244        | NT                | ----                     | 3/7/55      | 11.3                  | 10.6               | 9.9                 | 0.35                | 0.75                | 183        | NT                | ----                     |
| 4/4/55                                   | 7.1                   | 10.6               | 20.4                | 0.59                | 0.97                | 287        | ----              | ----                     | 4/4/55      | 11.4                  | 10.5               | 9.9                 | 0.33                | 0.95                | 132        | ----              | ----                     |
| 5/16/55                                  | 7.5                   | 9.7                | 15.1                | 0.63                | 0.38                | 300+       | ----              | ----                     | 5/16/55     | 10.9                  | 6.8                | 7.4                 | 0.59                | 0.62                | 235        | ----              | ----                     |
| <b>Site 309, Clark Co., Ala.</b>         |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Orangeburg L3/CL (SM)</b>             |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| 6/22/54                                  | 5.1                   | 4.3                | 9.4                 | 0.43                | 0.45                | 229        | ----              | ----                     | 6/22/54     | 3.5                   | 4.9                | 7.3                 | 0.30                | 0.45                | 300+       | ----              | ----                     |
| 8/3/54                                   | 7.4                   | 6.9                | 6.3                 | 0.70                | 0.72                | 222        | ----              | ----                     | 8/3/54      | 9.7                   | 6.4                | 10.4                | 0.32                | 0.59                | 300+       | ----              | ----                     |
| 9/21/54                                  | 2.7                   | 3.5                | 6.4                 | 0.25                | 0.37                | 300+       | ----              | ----                     | 9/21/54     | 2.2                   | 3.0                | 3.4                 | 0.13                | 0.43                | 300+       | ----              | ----                     |
| 11/10/54                                 | 5.5                   | 4.2                | 5.0                 | 0.52                | 0.44                | 249        | ----              | ----                     | 11/10/54    | 7.1                   | 9.1                | 2.7                 | 0.60                | 0.34                | 300+       | ----              | ----                     |
| 1/17/55                                  | 11.2                  | 10.3               | 15.0                | 1.06                | 1.07                | 169        | ----              | ----                     | 1/17/55     | 15.0                  | 10.1               | 15.4                | 1.25                | 1.65                | 183        | ----              | ----                     |
| 2/7/55                                   | 10.7                  | 11.5               | 16.0                | 1.01                | 1.19                | 150        | NT                | ----                     | 2/7/55      | 14.6                  | 16.2               | 13.1                | 1.24                | 1.43                | 136        | NT                | ----                     |
| 3/7/55                                   | 5.5                   | 5.3                | 12.2                | 0.62                | 0.65                | 215        | NT                | ----                     | 3/7/55      | 8.9                   | 11.3               | 10.0                | 0.74                | 1.04                | 256        | NT                | ----                     |
| 4/4/55                                   | 4.7                   | 5.7                | 11.1                | 0.44                | 0.59                | 215        | ----              | ----                     | 4/4/55      | 10.6                  | 11.9               | 10.3                | 0.90                | 1.09                | 295        | ----              | ----                     |
| 5/16/55                                  | 5.0                   | 4.7                | 7.7                 | 0.57                | 0.49                | 235        | ----              | ----                     | 5/16/55     | 17.1                  | 5.7                | 9.5                 | 1.45                | 0.52                | 300        | ----              | ----                     |
| <b>Site 311, Monroe Co., Ala.</b>        |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Ore SL/SL (CL)</b>                    |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| 6/22/54                                  | 4.4                   | 3.0                | 9.2                 | 0.44                | 0.35                | 300+       | ----              | ----                     | 6/22/54     | 4.5                   | 7.6                | 8.5                 | 0.40                | 0.62                | 300+       | ----              | ----                     |
| 8/3/54                                   | 10.9                  | 10.5               | 11.4                | 1.08                | 0.99                | 300+       | ----              | ----                     | 8/3/54      | 7.6                   | 11.3               | 13.5                | 0.62                | 0.75                | 300+       | ----              | ----                     |
| 9/21/54                                  | 3.0                   | 5.1                | 9.7                 | 0.30                | 0.57                | 300+       | ----              | ----                     | 9/21/54     | 7.1                   | 3.1                | 3.4                 | 0.44                | 0.56                | 300+       | ----              | ----                     |
| 11/10/54                                 | 5.7                   | 10.9               | 10.2                | 0.36                | 1.03                | 284        | ----              | ----                     | 11/10/54    | 9.2                   | 9.1                | 8.7                 | 0.33                | 0.74                | 283        | ----              | ----                     |
| 1/17/55                                  | 14.4                  | 19.0               | 19.9                | 1.43                | 1.79                | 135        | ----              | ----                     | 1/17/55     | 15.4                  | 17.8               | 19.1                | 1.33                | 1.45                | 141        | ----              | ----                     |
| 2/7/55                                   | 14.9                  | 15.6               | 20.1                | 1.48                | 1.56                | 112        | 1.11*             | ----                     | 2/7/55      | 15.7                  | 18.2               | 16.8                | 1.41                | 1.49                | 132        | 0.90              | ----                     |
| 3/7/55                                   | 7.7                   | 12.6               | 14.6                | 0.76                | 1.19                | 203        | NT                | ----                     | 3/7/55      | 9.4                   | 12.0               | 12.4                | 0.85                | 0.98                | 200        | NT                | ----                     |
| 4/4/55                                   | 9.9                   | 13.9               | 15.1                | 0.93                | 1.31                | 211        | ----              | ----                     | 4/4/55      | 5.6                   | 3.9                | 10.9                | 0.50                | 0.73                | 259        | ----              | ----                     |
| 5/16/55                                  | 10.0                  | 13.2               | 13.6                | 0.79                | 1.24                | 188        | ----              | ----                     | 5/16/55     | 9.2                   | 9.1                | 10.9                | 0.53                | 0.74                | 300+       | ----              | ----                     |
| <b>Site 312, Conecuh Co., Ala.</b>       |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Red Bay SL/SL (SC)</b>                |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| 6/22/54                                  | 4.4                   | 3.0                | 9.2                 | 0.44                | 0.35                | 300+       | ----              | ----                     | 6/22/54     | 4.5                   | 7.6                | 8.5                 | 0.40                | 0.62                | 300+       | ----              | ----                     |
| 8/3/54                                   | 10.9                  | 10.5               | 11.4                | 1.08                | 0.99                | 300+       | ----              | ----                     | 8/3/54      | 7.6                   | 11.3               | 13.5                | 0.62                | 0.75                | 300+       | ----              | ----                     |
| 9/21/54                                  | 3.0                   | 5.1                | 9.7                 | 0.30                | 0.57                | 300+       | ----              | ----                     | 9/21/54     | 7.1                   | 3.1                | 3.4                 | 0.44                | 0.56                | 300+       | ----              | ----                     |
| 11/10/54                                 | 5.7                   | 10.9               | 10.2                | 0.36                | 1.03                | 284        | ----              | ----                     | 11/10/54    | 9.2                   | 9.1                | 8.7                 | 0.33                | 0.74                | 283        | ----              | ----                     |
| 1/17/55                                  | 14.4                  | 19.0               | 19.9                | 1.43                | 1.79                | 135        | ----              | ----                     | 1/17/55     | 15.4                  | 17.8               | 19.1                | 1.33                | 1.45                | 141        | ----              | ----                     |
| 2/7/55                                   | 14.9                  | 15.6               | 20.1                | 1.48                | 1.56                | 112        | 1.11*             | ----                     | 2/7/55      | 15.7                  | 18.2               | 16.8                | 1.41                | 1.49                | 132        | 0.90              | ----                     |
| 3/7/55                                   | 7.7                   | 12.6               | 14.6                | 0.76                | 1.19                | 203        | NT                | ----                     | 3/7/55      | 9.4                   | 12.0               | 12.4                | 0.85                | 0.98                | 200        | NT                | ----                     |
| 4/4/55                                   | 9.9                   | 13.9               | 15.1                | 0.93                | 1.31                | 211        | ----              | ----                     | 4/4/55      | 5.6                   | 3.9                | 10.9                | 0.50                | 0.73                | 259        | ----              | ----                     |
| 5/16/55                                  | 10.0                  | 13.2               | 13.6                | 0.79                | 1.24                | 188        | ----              | ----                     | 5/16/55     | 9.2                   | 9.1                | 10.9                | 0.53                | 0.74                | 300+       | ----              | ----                     |
| <b>Site 313, Conecuh Co., Ala.</b>       |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Norfolk L3/LS (SM)</b>                |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| 6/23/54                                  | 3.8                   | 3.1                | 2.7                 | 0.34                | 0.32                | 300+       | ----              | ----                     | 6/23/54     | 37.6                  | 27.5               | 17.0                | 2.34                | 2.51                | 210        | ----              | ----                     |
| 8/4/54                                   | 6.6                   | 5.0                | 3.0                 | 0.59                | 0.51                | 300        | ----              | ----                     | 8/4/54      | 39.9                  | 21.4               | 17.4                | 3.02                | 1.96                | 272        | ----              | ----                     |
| 9/21/54                                  | 1.6                   | 3.0                | 3.8                 | 0.41                | 0.31                | 300+       | ----              | ----                     | 9/21/54     | 25.9                  | 13.1               | 3.6                 | 1.96                | 1.20                | 100        | ----              | ----                     |
| 1/17/55                                  | 12.5                  | 13.3               | 13.4                | 1.12                | 1.46                | 121        | ----              | ----                     | 1/10/54     | 34.5                  | 22.6               | 14.2                | 2.61                | 2.07                | 300        | ----              | ----                     |
| 2/7/55                                   | 15.7                  | 14.1               | 13.5                | 1.40                | 1.45                | 143        | NT                | ----                     | 1/17/55     | 21.7                  | 27.0               | 38.8                | 1.64                | 2.48                | 196        | ----              | 1                        |
| 3/7/55                                   | 12.5                  | 11.4               | 11.4                | 1.12                | 1.17                | 149        | NT                | ----                     | 2/7/55      | 42.6                  | 25.5               | 22.5                | 3.22                | 2.43                | 217        | NT                | 0                        |
| 3/7/55                                   | 12.5                  | 11.4               | 11.4                | 1.12                | 1.17                | 149        | NT                | ----                     | 3/7/55      | 47.6                  | 22.6               | 25.7                | 3.22                | 2.07                | 300        | NT                | 4                        |
| 4/4/55                                   | 12.2                  | 9.6                | 9.7                 | 1.09                | 0.98                | 208        | ----              | ----                     | 4/4/55      | 39.1                  | 27.3               | 25.6                | 2.35                | 2.51                | 203        | ----              | 9                        |
| 5/16/55                                  | 10.1                  | 8.5                | 6.3                 | 0.90                | 0.87                | 241        | ----              | ----                     | 5/16/55     | 41.3                  | 34.6               | 26.5                | 3.12                | 2.52                | 172        | ----              | 13                       |
| Probable flooding before 5/16/55         |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Site 315, Coffee Co., Ala.</b>        |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Orangeburg &amp; Rustle S/LS (SM)</b> |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| 6/23/54                                  | 4.8                   | 4.2                | 4.1                 | 0.43                | 0.41                | 143        | ----              | ----                     | 6/24/54     | 12.6                  | 9.7                | 13.4                | 1.27                | 0.96                | 255        | ----              | ----                     |
| 8/4/54                                   | 1.2                   | .7                 | 2.1                 | 0.11                | 0.07                | 302+       | ----              | ----                     | 8/4/54      | 8.3                   | 7.5                | 12.7                | 0.24                | 0.83                | 300+       | ----              | ----                     |
| 9/21/54                                  | 1.1                   | 0.9                | 1.9                 | 0.10                | 0.09                | 300+       | ----              | ----                     | 9/21/54     | 3.4                   | 2.4                | 0.7                 | 0.34                | 0.26                | 300+       | ----              | ----                     |
| 1/18/55                                  | 10.6                  | 9.9                | 10.4                | 0.94                | 0.96                | 134        | ----              | ----                     | 1/19/55     | 14.8                  | 9.7                | 17.1                | 1.49                | 1.40                | 238        | ----              | ----                     |
| 2/8/55                                   | 10.5                  | 9.4                | 11.9                | 0.93                | 0.91                | 131        | NT                | ----                     | 2/8/55      | 15.0                  | 12.3               | 16.5                | 1.51                | 1.41                | 259        | NT                | ----                     |
| 3/8/55                                   | 5.4                   | 4.5                | 6.5                 | 0.48                | 0.44                | 146        | NT                | ----                     | 3/3/55      | 3.0                   | 6.1                | 11.3                | 0.40                | 0.67                | 300+       | NT                | ----                     |
| 4/5/55                                   | 3.1                   | 3.4                | 5.2                 | 0.28                | 0.33                | 221        | ----              | ----                     | 4/5/55      | 5.7                   | 5.7                | 9.3                 | 0.23                | 0.63                | 300+       | NT                | ----                     |
| 5/17/55                                  | 8.5                   | 6.3                | 4.7                 | 0.75                | 0.66                | 122        | ----              | ----                     | 5/17/55     | 10.3                  | 5.6                | 2.6                 | 1.04                | 0.62                | 300+       | NT                | ----                     |
| <b>Site 316, Henry Co., Ala.</b>         |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| <b>Norfolk SL/SL (SM)</b>                |                       |                    |                     |                     |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |
| 6/24/54                                  | 12.6                  | 9.7                | 13.4                | 1.27                | 0.96                | 255        | ----              | ----                     | 6/24/54     | 12.6                  | 9.7                | 13.4                | 1.27                | 0.96                | 255        | ----              | ----                     |
| 8/4/54                                   | 8.3                   | 7.5                | 12.7                | 0.24                | 0.83                | 300+       | ----              | ----                     | 8/4/54      | 8.3                   | 7.5                | 12.7                | 0.24                | 0.83                | 300+       | ----              | ----                     |
| 9/21/54                                  | 3.4                   | 2.4                | 0.7                 | 0.34                | 0.26                | 300+       | ----              | ----                     | 9/21/54     | 3.4                   | 2.4                | 0.7                 | 0.34                | 0.26                | 300+       | ----              | ----                     |
| 1/19/55                                  | 14.8                  | 9.7                | 17.1                | 1.49                | 1.40                | 238        | ----              | ----                     | 1/19/55     | 14.8                  | 9.7                | 17.1                | 1.49                | 1.40                | 238        | ----              | ----                     |
| 2/8/55                                   | 15.0                  | 12.3               | 16.5                | 1.51                | 1.41                | 259        | NT                | ----                     | 2/8/55      | 15.0                  | 12.3               | 16.5                | 1.51                | 1.41                | 259        | NT                | ----                     |
| 3/3/55                                   | 3.0                   | 6.1                | 11.3                | 0.40                |                     |            |                   |                          |             |                       |                    |                     |                     |                     |            |                   |                          |



Table B3a (Continued)  
Southern Region (Continued)

| Sample<br>Date                                  | Soil Moisture Content        |                          |                           |                         |                          | Cone<br>Index | Remold-<br>ing<br>Index | Depth<br>to<br>Water<br>Table<br>in. | Sample<br>Date | Soil Moisture Content   |                          |                           |                         |                          | Cone<br>Index | Remold-<br>ing<br>Index | Depth<br>to<br>Water<br>Table<br>in. |
|---|------------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------|-------------------------|--------------------------------------|----------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------|-------------------------|--------------------------------------|
|   | Percent Weight Basis         |                          |                           |                         |                          |               |                         |                                      |                | Percent Weight Basis    |                          |                           |                         |                          |               |                         |                                      |
|   | 0- to<br>6-in.<br>Depth      | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth |               |                         |                                      |                | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth |               |                         |                                      |
| Site 317, Henry Co., Ala.                       |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Norfolk SL/SL (SM)                              |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| 2/24/54   | 2.4                          | 8.6                      | 7.3                       | 3.4                     | 0.87                     | 273           | ----                    | ----                                 | 6/24/54        | 11.2                    | 10.1                     | 9.5                       | 0.98                    | 1.04                     | 130           | ----                    | ----                                 |
| 3/4/54  | 2.3                          | 6.7                      | 5.2                       | 0.27                    | 0.53                     | 300+          | ----                    | ----                                 | 3/4/54         | 4.9                     | 8.0                      | 8.9                       | 0.43                    | 0.82                     | 300+          | ----                    | ----                                 |
| 7/21/54   | 2.5                          | 1.7                      | 2.1                       | 0.27                    | 0.17                     | 300+          | ----                    | ----                                 | 7/21/54        | 6.2                     | 3.3                      | 4.4                       | 0.54                    | 0.39                     | 300+          | ----                    | ----                                 |
| 1/19/55   | 10.1                         | 2.0                      | 10.7                      | 0.37                    | 0.92                     | 275           | ----                    | ----                                 | 1/19/55        | 15.1                    | 12.7                     | 12.9                      | 1.32                    | 1.30                     | 154           | ----                    | ----                                 |
| 2/3/55  | 2.9                          | 7.3                      | 7.3                       | 0.35                    | 0.74                     | 272           | NT                      | ----                                 | 2/3/55         | 12.8                    | 11.1                     | 12.1                      | 1.05                    | 1.14                     | 177           | NT                      | ----                                 |
| 3/5/55  | 3.1                          | 5.4                      | 3.2                       | 0.30                    | 0.55                     | 275           | NT                      | ----                                 | 3/5/55         | 6.7                     | 7.0                      | 5.1                       | 0.59                    | 0.72                     | 325           | NT                      | ----                                 |
| 4/5/55  | 2.4                          | 5.4                      | 7.2                       | 0.21                    | 0.55                     | 293           | ----                    | ----                                 | 4/5/55         | 9.9                     | 8.4                      | 7.7                       | 0.87                    | 0.96                     | 350           | ----                    | ----                                 |
| 5/17/55   | 2.4                          | 4.3                      | 4.5                       | 0.73                    | 0.50                     | 300+          | ----                    | ----                                 | 5/17/55        | 10.6                    | 6.1                      | 5.5                       | 0.93                    | 0.63                     | 300+          | ----                    | ----                                 |
| 2 1/2 in. drilled, 12-in. rows, 1/10/55         |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Site 318, Henry Co., Ala.                       |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Norfolk SL/SL (SM)                              |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| 2/24/54   | 2.2                          | 50.0                     | 47.3                      | 2.53                    | 3.1                      | 117           | ----                    | ----                                 | 6/24/54        | 5.3                     | 8.1                      | 8.2                       | 0.50                    | 0.55                     | 271           | ----                    | ----                                 |
| 3/4/54  | 33.0                         | 40.0                     | 41.0                      | 1.93                    | 1.43                     | 159           | ----                    | ----                                 | 3/4/54         | 5.4                     | 9.2                      | 13.2                      | 0.51                    | 0.96                     | 300+          | ----                    | ----                                 |
| 9/22/54   | 33.3                         | 31.0                     | 29.3                      | 1.00                    | 1.1                      | 133           | ----                    | ----                                 | 9/22/54        | 4.7                     | 5.9                      | 6.9                       | 0.45                    | 0.52                     | 300+          | ----                    | ----                                 |
| 1/19/55   | 52.1                         | 55.0                     | 54.7                      | 3.13                    | 3.12                     | 23            | ----                    | ----                                 | 1/19/55        | 14.3                    | 14.1                     | 15.4                      | 1.35                    | 1.47                     | 146           | ----                    | ----                                 |
| 2/3/55  | 47.0                         | 45.5                     | 45.1                      | 2.4                     | 1.72                     | 39            | 0.50                    | 15                                   | 2/3/55         | 13.5                    | 13.9                     | 16.5                      | 1.31                    | 1.45                     | 158           | NT                      | ----                                 |
| 3/5/55  | 44.1                         | 52.4                     | 39.7                      | 1.4                     | 1.55                     | 30            | 0.55                    | 16                                   | 3/5/55         | 6.5                     | 10.2                     | 12.5                      | 0.62                    | 1.06                     | 204           | NT                      | ----                                 |
| 4/5/55  | 42.2                         | 53.2                     | 37.1                      | 1.7                     | 1.19                     | 106           | ----                    | 19                                   | 4/5/55         | 11.4                    | 11.9                     | 10.9                      | 1.08                    | 1.24                     | 223           | ----                    | ----                                 |
| 5/17/55   | 40.0                         | 45.3                     | 35.2                      | 1.32                    | 1.50                     | 71            | ----                    | 21                                   | 5/17/55        | 11.6                    | 9.8                      | 11.7                      | 1.10                    | 1.02                     | 278           | ----                    | ----                                 |
| Site 321, Jackson Co., Fla.                     |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Faceville SL/SCL (SM)                           |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| 2/24/54   | 2.4                          | 3.8                      | 15.9                      | 0.24                    | 0.89                     | 283           | ----                    | ----                                 | 6/24/54        | 11.7                    | 7.6                      | 6.3                       | 0.88                    | 0.78                     | 300           | ----                    | ----                                 |
| 3/4/54  | 3.2                          | 12.2                     | 15.3                      | 0.76                    | 1.11                     | 256           | ----                    | ----                                 | 3/4/54         | 14.5                    | 10.4                     | 7.9                       | 1.10                    | 1.07                     | 300           | ----                    | ----                                 |
| 9/22/54   | 3.3                          | 10.8                     | 10.8                      | 0.82                    | 0.98                     | 302           | ----                    | ----                                 | 9/22/54        | 13.9                    | 11.5                     | 8.2                       | 1.05                    | 1.19                     | 197           | ----                    | ----                                 |
| 11/11/54  | 4.1                          | 12.2                     | 17.0                      | 0.64                    | 1.11                     | 252           | ----                    | ----                                 | 1/19/55        | 16.4                    | 15.3                     | 15.7                      | 1.24                    | 1.57                     | 141           | ----                    | ----                                 |
| 1/19/55   | 11.2                         | 13.2                     | 20.0                      | 1.30                    | 1.65                     | 1.7           | ----                    | ----                                 | 2/3/55         | 16.5                    | 13.2                     | 15.3                      | 1.25                    | 1.35                     | 137           | 0.21                    | ----                                 |
| 2/3/55  | 11.2                         | 17.3                     | 21.1                      | 1.09                    | 1.57                     | 127           | 0.91                    | ----                                 | 3/5/55         | 13.8                    | 9.4                      | 9.9                       | 1.04                    | 0.96                     | 275           | NT                      | ----                                 |
| 3/5/55  | 7.0                          | 12.4                     | 19.1                      | 0.45                    | 1.12                     | 198           | NT                      | ----                                 | 4/5/55         | 13.8                    | 12.2                     | 11.2                      | 1.04                    | 1.25                     | 268           | ----                    | ----                                 |
| 4/5/55  | 2.1                          | 15.0                     | 17.3                      | 0.27                    | 1.35                     | 192           | ----                    | ----                                 | 5/10/55        | 12.2                    | 9.6                      | 9.6                       | 0.92                    | 0.98                     | 300+          | ----                    | ----                                 |
| 5/10/55   | 2.1                          | 3.5                      | 13.5                      | 0.32                    | 0.53                     | 300+          | ----                    | ----                                 |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Site 323, Jackson Co., Fla.                     |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Faceville SL/SL (SM)                            |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| 6/24/54   | 12.3                         | 11.7                     | 11.2                      | 1.01                    | 1.15                     | 124           | ----                    | ----                                 | 6/24/54        | 30.0                    | 23.1                     | 29.4                      | 2.32                    | 2.13                     | 177           | ----                    | ----                                 |
| 3/4/54  | 3.4                          | 7.7                      | 7.7                       | 0.57                    | 0.73                     | 228           | ----                    | ----                                 | 3/4/54         | 22.8                    | 17.8                     | 21.6                      | 1.76                    | 1.64                     | 300           | ----                    | ----                                 |
| 9/22/54   | 4.9                          | 3.4                      | 3.8                       | 0.39                    | 0.33                     | 257           | ----                    | ----                                 | 9/22/54        | 14.7                    | 14.4                     | 18.5                      | 1.14                    | 1.33                     | 300+          | ----                    | ----                                 |
| 1/19/55   | 10.7                         | 11.1                     | 10.9                      | 0.85                    | 1.09                     | 145           | ----                    | ----                                 | 1/19/55        | 32.3                    | 25.4                     | 29.4                      | 2.56                    | 2.35                     | 241           | ----                    | ----                                 |
| 2/3/55  | 11.1                         | 12.0                     | 11.1                      | 0.89                    | 1.24                     | 133           | NT                      | ----                                 | 2/3/55         | 23.2                    | 24.5                     | 29.0                      | 2.26                    | 2.25                     | 241           | 0.74                    | ----                                 |
| 3/5/55  | 8.0                          | 5.5                      | 7.3                       | 0.64                    | 0.54                     | 197           | NT                      | ----                                 | 3/5/55         | 27.0                    | 20.4                     | 25.3                      | 2.09                    | 1.38                     | 277           | NT                      | ----                                 |
| 4/5/55  | 9.0                          | 3.4                      | 2.9                       | 0.72                    | 0.33                     | 211           | ----                    | ----                                 | 4/5/55         | 24.2                    | 21.9                     | 27.5                      | 1.37                    | 2.02                     | 272           | ----                    | ----                                 |
| 5/10/55   | 0.2                          | 7.0                      | 7.4                       | 0.49                    | 0.69                     | 234           | ----                    | ----                                 | 5/10/55        | 19.5                    | 20.4                     | 25.8                      | 1.51                    | 1.08                     | 300+          | ----                    | ----                                 |
| Site 325, Gadsden Co., Fla.                     |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Vancluse SL/SL (SM)                             |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| 2/24/54   | 10.6                         | 9.4                      | 14.2                      | 0.99                    | 0.95                     | 1.7           | ----                    | ----                                 | 6/25/54        | 13.0                    | 9.2                      | 7.8                       | 1.22                    | 0.87                     | 250           | ----                    | ----                                 |
| 3/4/54  | 1.7                          | 1.8                      | 6.6                       | 0.45                    | 0.55                     | 200           | ----                    | ----                                 | 3/4/54         | 7.7                     | 5.8                      | 5.9                       | 0.73                    | 0.55                     | 300           | ----                    | ----                                 |
| 9/22/54   | 5.1                          | 4.7                      | 1.0                       | 0.21                    | 0.17                     | 300+          | ----                    | ----                                 | 9/22/54        | 4.7                     | 2.2                      | 1.4                       | 0.44                    | 0.21                     | 300+          | ----                    | ----                                 |
| 1/19/55   | 2.3                          | 11.2                     | 24.1                      | 0.73                    | 1.15                     | 152           | ----                    | ----                                 | 1/19/55        | 10.3                    | 11.3                     | 12.3                      | 0.97                    | 1.05                     | 247           | ----                    | ----                                 |
| 2/3/55  | 7.6                          | 10.1                     | 14.7                      | 0.71                    | 1.04                     | 231           | NT                      | ----                                 | 2/3/55         | 7.6                     | 8.8                      | 11.3                      | 0.97                    | 0.93                     | 247           | NT                      | ----                                 |
| 3/5/55  | 3.3                          | 5.1                      | 6.5                       | 0.31                    | 0.52                     | 276           | NT                      | ----                                 | 3/5/55         | 5.5                     | 7.0                      | 5.4                       | 0.55                    | 0.66                     | 302           | NT                      | ----                                 |
| 4/5/55  | 3.2                          | 2.3                      | 2.1                       | 0.37                    | 0.44                     | 276           | ----                    | ----                                 | 4/5/55         | 4.6                     | 3.3                      | 5.1                       | 0.43                    | 0.41                     | 257           | ----                    | ----                                 |
| 5/10/55   | 3.9                          | 4.1                      | 3.1                       | 0.37                    | 0.42                     | 300+          | ----                    | ----                                 | 5/10/55        | 3.9                     | 4.1                      | 4.5                       | 0.37                    | 0.41                     | 257           | ----                    | ----                                 |
| Site 327, Gadsden Co., Fla.                     |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Red Bay SL/SL (SM)                              |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| 2/24/54   | 3.4                          | 9.1                      | 11.0                      | 0.75                    | 0.37                     | 284           | ----                    | ----                                 | 6/25/54        | 13.3                    | 16.7                     | 26.3                      | 1.24                    | 1.45                     | 300+          | ----                    | ----                                 |
| 3/4/54  | 4.1                          | 1.3                      | 10.8                      | 0.55                    | 0.30                     | 300+          | ----                    | ----                                 | 3/5/54         | 11.1                    | 18.4                     | 23.9                      | 1.01                    | 1.60                     | 274           | ----                    | ----                                 |
| 9/22/54   | 5.5                          | 4.2                      | 7.4                       | 0.50                    | 0.40                     | 300+          | ----                    | ----                                 | 9/22/54        | 17.4                    | 22.7                     | 5.9                       | 1.57                    | 1.97                     | 133           | ----                    | ----                                 |
| 11/11/54  | 7.8                          | 2.4                      | 9.0                       | 0.70                    | 0.51                     | 300+          | ----                    | ----                                 | 1/19/55        | 19.6                    | 26.4                     | 30.2                      | 1.71                    | 2.30                     | 154           | ----                    | ----                                 |
| 1/19/55   | 15.2                         | 12.9                     | 16.7                      | 1.37                    | 1.24                     | 120           | ----                    | ----                                 | 2/3/55         | 17.9                    | 23.9                     | 28.3                      | 1.61                    | 2.07                     | 162           | 0.85                    | ----                                 |
| 2/3/55  | 13.0                         | 13.4                     | 15.6                      | 1.22                    | 1.29                     | 224           | NT                      | ----                                 | 3/5/55         | 14.0                    | 13.5                     | 33.5                      | 1.03                    | 1.61                     | 275           | NT                      | ----                                 |
| 3/5/55  | 9.2                          | 9.1                      | 13.3                      | 0.83                    | 0.87                     | 300+          | NT                      | ----                                 | 4/5/55         | 17.7                    | 20.0                     | 21.7                      | 1.59                    | 1.74                     | 327           | ----                    | ----                                 |
| 4/5/55  | Not sampled - Site disturbed |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Site 329, Leon Co., Fla.                        |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Schlockonee SL/SCL (SM)                         |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| 2/24/54   | 16.0                         | 12.9                     | 11.3                      | 1.49                    | 1.12                     | 300+          | ----                    | ----                                 | 5/25/54        | 5.9                     | 5.8                      | 5.1                       | 0.74                    | 0.56                     | 300           | ----                    | ----                                 |
| 3/5/54  | 10.3                         | 11.1                     | 11.2                      | 0.93                    | 0.97                     | 300+          | ----                    | ----                                 | 7/5/54         | 7.2                     | 4.5                      | 4.1                       | 0.51                    | 0.44                     | 300+          | ----                    | ----                                 |
| 9/22/54   | 16.4                         | 14.7                     | 13.6                      | 1.45                    | 1.20                     | 201           | ----                    | ----                                 | 9/22/54        | 10.5                    | 9.5                      | 6.4                       | 0.68                    | 0.31                     | 230           | ----                    | ----                                 |
| 11/11/54  | 13.1                         | 13.1                     | 13.3                      | 1.18                    | 1.14                     | 279           | ----                    | ----                                 | 1/19/55        | 14.1                    | 11.7                     | 12.3                      | 1.17                    | 1.12                     | 190           | ----                    | ----                                 |
| 1/19/55   | 19.9                         | 19.9                     | 19.1                      | 1.73                    | 1.73                     | 171           | ----                    | ----                                 | 2/3/55         | 14.1                    | 10.3                     | 7.9                       | 1.17                    | 0.79                     | 195           | NT                      | ----                                 |
| 2/3/55  | 19.8                         | 19.4                     | 18.4                      | 1.69                    | 1.69                     | 312           | NT                      | ----                                 | 3/5/55         | 11.1                    | 2.1                      | 1.5                       | 0.92                    | 0.78                     | 204           | NT                      | ----                                 |
| 3/5/55  | 14.9                         | 32.1                     | 32.0                      | 1.43                    | 1.12                     | 239           | NT                      | ----                                 | 4/5/55         | 9.7                     | 9.2                      | 7.2                       | 0.86                    | 0.69                     | 212           | ----                    | ----                                 |
| 4/5/55  | 21.9                         | 26.3                     | 21.0                      | 2.15                    | 2.19                     | 227           | ----                    | ----                                 | 5/10/55        | 9.5                     | 5.7                      | 4.7                       | 3.70                    | 3.55                     | 300+          | ----                    | ----                                 |
| 5/10/55   | 17.0                         | 18.8                     | 24.6                      | 1.53                    | 1.64                     | 300+          | ----                    | ----                                 |                |                         |                          |                           |                         |                          |               |                         |                                      |
| samples taken about 20 feet from plot on 3/9/55 |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Site 330, Jefferson Co., Fla.                   |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| Plummer SL/SL (SM)                              |                              |                          |                           |                         |                          |               |                         |                                      |                |                         |                          |                           |                         |                          |               |                         |                                      |
| 2/24/54   | 16.0                         | 12.9                     | 11.3                      | 1.49                    | 1.12                     | 300+          | ----                    | ----                                 | 5/25/54        | 5.9                     | 5.8                      | 5.1                       | 0.74                    | 0.56                     | 300           | ----                    | ----                                 |
| 3/5/54  | 10.3                         | 11.1                     | 11.2                      | 0.93                    | 0.97                     | 300+          | ----                    | ----                                 | 7/5/54         | 7.2                     | 4.5                      | 4.1                       | 0.51                    | 0.44                     | 300+          | ----                    | ----                                 |
| 9/22/54   | 16.4                         | 14.7                     | 13.6                      | 1.45                    | 1.20                     | 201           | ----                    | ----                                 | 9/22/54        | 10.5                    | 9.5                      | 6.4                       | 0.68                    | 0.31                     | 230           | ----                    | ----                                 |
| 11/11/54  | 13.1                         | 13.1                     | 13.3                      | 1.18                    | 1.14                     | 279           | ----                    | ----                                 | 1/19/55        | 14.1                    | 11.7                     | 12.3                      | 1.17                    | 1.12                     | 190           | ----                    | ----                                 |
| 1/19/55   | 19.9                         | 19.9                     | 19.1                      | 1.73                    | 1.73                     | 171           | ----                    | ----                                 | 2/3/55         | 14.1                    | 10.3                     | 7.9                       | 1.17                    | 0.79                     | 195           | NT                      | ----                                 |
| 2/3/55  | 19.8                         | 19.4                     | 18.4                      | 1.69                    | 1.69                     | 312           | NT                      | ----                                 | 3/5/55         | 11.1                    | 2.1                      | 1.5                       | 0.92                    | 0.78                     | 204           | NT                      | ----                                 |
| 3/5/55  | 14.9                         | 32.1                     | 32.0                      | 1.43                    | 1.12                     | 239           | NT                      | ----                                 | 4/5/55         | 9.7                     | 9.2                      | 7.2                       | 0.86                    | 0.69                     | 212           | ----                    | ----                                 |
| 4/5/55  | 21.9                         | 26.3                     | 21.0                      | 2.15                    | 2.19                     | 227           | ----                    | ----                                 | 5/10/55        | 9.5                     | 5.7                      | 4.7                       | 3.70                    | 3.55                     | 300+          | ----                    | ----                                 |
| 5/10/55   | 17.0                         | 18.8                     | 24.6                      | 1.53                    | 1.64                     | 300+          | ----                    | ----                                 |                |                         |                          |                           |                         |                          |               |                         |                                      |



Table B3a (Continued)  
Southern Region (Continued)

| Sample<br>Date                                     | Soil Moisture Content   |                          |                           |                         |                          |                           | Remold-<br>ing<br>Index | Depth<br>to<br>Water<br>Table<br>in. | Soil Moisture Content   |                          |                           |                         |                          |                           | Cone<br>Index | Penet-<br>ring<br>Index | Depth<br>to<br>Water<br>Table<br>in. |
|--|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|---------------|-------------------------|--------------------------------------|
|  | Percent Weight Basis    |                          |                           | Percent Weight Basis    |                          |                           |                         |                                      | Percent Weight Basis    |                          |                           | Percent Weight Basis    |                          |                           |               |                         |                                      |
|  | 0- to<br>1-in.<br>Depth | 1- to<br>12-in.<br>Depth | 12- to<br>24-in.<br>Depth | 0- to<br>1-in.<br>Depth | 1- to<br>12-in.<br>Depth | 12- to<br>24-in.<br>Depth |                         |                                      | 0- to<br>1-in.<br>Depth | 1- to<br>12-in.<br>Depth | 12- to<br>24-in.<br>Depth | 0- to<br>1-in.<br>Depth | 1- to<br>12-in.<br>Depth | 12- to<br>24-in.<br>Depth |               |                         |                                      |
| Site 331, Jefferson Co., Fla.<br>Lakeland S/S (SM) |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 7.5                     | 1.0                      | 1.0                       | 1.0                     | 0.21                     | 356                       | ----                    | 5/25/54                              | 10.7                    | 6.2                      | 12.3                      | 0.37                    | 0.57                     | 300+                      | ----          | ----                    |                                      |
| 8/5/54   | 1.0                     | 1.0                      | 1.0                       | 1.0                     | 0.14                     | 302+                      | ----                    | 8/5/54                               | 2.4                     | 3.2                      | 7.6                       | 0.20                    | 0.29                     | 300+                      | ----          | ----                    |                                      |
| 9/23/54  | 1.0                     | 1.0                      | 1.0                       | 1.0                     | 0.32                     | 751                       | ----                    | 9/23/54                              | 12.1                    | 5.4                      | 6.3                       | 1.00                    | 0.50                     | 300+                      | ----          | ----                    |                                      |
| 1/23/55  | 12.0                    | 1.0                      | 1.0                       | 1.0                     | 0.23                     | 125                       | ----                    | 1/23/55                              | 12.0                    | 1.6                      | 11.9                      | 0.99                    | 1.46                     | 300                       | ----          | ----                    |                                      |
| 3/2/55   | 12.0                    | 1.0                      | 1.0                       | 1.0                     | 1.02                     | 127                       | NT                      | 3/2/55                               | 14.2                    | 10.3                     | 13.4                      | 1.18                    | 0.99                     | 300                       | NT            | 23                      |                                      |
| 3/9/55   | 1.0                     | 1.0                      | 1.0                       | 1.0                     | 0.26                     | 271                       | NT                      | 3/9/55                               | 9.6                     | 10.6                     | 10.7                      | 0.77                    | 0.97                     | 300                       | NT            | DRY                     |                                      |
| 4/5/55   | 1.0                     | 1.0                      | 1.0                       | 1.0                     | 0.43                     | 253                       | ----                    | 4/5/55                               | 7.0                     | 7.7                      | 7.4                       | 0.58                    | 0.72                     | 294                       | ----          | DRY                     |                                      |
| 5/10/55  | 1.0                     | 1.0                      | 1.0                       | 1.0                     | 0.30                     | 300+                      | ----                    | 5/10/55                              | 5.7                     | 5.2                      | 5.0                       | 0.47                    | 0.43                     | 300+                      | ----          | DRY                     |                                      |
| Site 332, Jefferson Co., Fla.<br>Leon S/S (S')     |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 10.7                    | 6.2                      | 12.3                      | 0.37                    | 0.57                     | 300+                      | ----                    | 5/25/54                              | 10.7                    | 6.2                      | 12.3                      | 0.37                    | 0.57                     | 300+                      | ----          | ----                    |                                      |
| 8/5/54   | 2.4                     | 3.2                      | 7.6                       | 0.20                    | 0.29                     | 300+                      | ----                    | 8/5/54                               | 2.4                     | 3.2                      | 7.6                       | 0.20                    | 0.29                     | 300+                      | ----          | ----                    |                                      |
| 9/23/54  | 12.1                    | 5.4                      | 6.3                       | 1.00                    | 0.50                     | 300+                      | ----                    | 9/23/54                              | 12.1                    | 5.4                      | 6.3                       | 1.00                    | 0.50                     | 300+                      | ----          | ----                    |                                      |
| 1/23/55  | 12.0                    | 1.6                      | 11.9                      | 0.99                    | 1.46                     | 300                       | ----                    | 1/23/55                              | 12.0                    | 1.6                      | 11.9                      | 0.99                    | 1.46                     | 300                       | ----          | ----                    |                                      |
| 3/2/55   | 14.2                    | 10.3                     | 13.4                      | 1.18                    | 0.99                     | 300                       | NT                      | 3/2/55                               | 14.2                    | 10.3                     | 13.4                      | 1.18                    | 0.99                     | 300                       | NT            | 23                      |                                      |
| 3/9/55   | 9.6                     | 10.6                     | 10.7                      | 0.77                    | 0.97                     | 300                       | NT                      | 3/9/55                               | 9.6                     | 10.6                     | 10.7                      | 0.77                    | 0.97                     | 300                       | NT            | DRY                     |                                      |
| 4/5/55   | 7.0                     | 7.7                      | 7.4                       | 0.58                    | 0.72                     | 294                       | ----                    | 4/5/55                               | 7.0                     | 7.7                      | 7.4                       | 0.58                    | 0.72                     | 294                       | ----          | DRY                     |                                      |
| 5/10/55  | 5.7                     | 5.2                      | 5.0                       | 0.47                    | 0.43                     | 300+                      | ----                    | 5/10/55                              | 5.7                     | 5.2                      | 5.0                       | 0.47                    | 0.43                     | 300+                      | ----          | DRY                     |                                      |
| Site 333, Madison Co., Fla.<br>Lakeland S/S (S')   |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 5.5                     | 3.3                      | 3.3                       | 0.54                    | 0.54                     | 241                       | ----                    | 5/25/54                              | 7.8                     | 10.4                     | 10.3                      | 0.67                    | 0.83                     | 243                       | ----          | ----                    |                                      |
| 8/5/54   | 3.0                     | 3.3                      | 3.3                       | 0.21                    | 0.21                     | 300+                      | ----                    | 8/5/54                               | 4.1                     | 6.3                      | 5.5                       | 0.33                    | 0.51                     | 300                       | ----          | ----                    |                                      |
| 9/23/54  | 3.0                     | 3.3                      | 3.3                       | 0.5                     | 0.5                      | 125                       | ----                    | 9/23/54                              | 4.2                     | 6.5                      | 5.6                       | 0.34                    | 0.53                     | 300                       | ----          | ----                    |                                      |
| 1/23/55  | 3.0                     | 3.3                      | 3.3                       | 0.30                    | 0.30                     | 125                       | ----                    | 1/23/55                              | 14.9                    | 17.5                     | 15.4                      | 1.19                    | 1.43                     | 162                       | ----          | ----                    |                                      |
| 3/2/55   | 3.0                     | 3.3                      | 3.3                       | 0.21                    | 0.21                     | 121                       | NT                      | 3/2/55                               | 15.3                    | 19.0                     | 13.0                      | 1.22                    | 1.55                     | 301                       | 1.49          | ----                    |                                      |
| 3/9/55   | 3.0                     | 3.3                      | 3.3                       | 0.26                    | 0.26                     | 300                       | NT                      | 3/9/55                               | 8.8                     | 12.9                     | 12.9                      | 0.70                    | 1.05                     | 130                       | NT            | ----                    |                                      |
| 4/5/55   | 3.0                     | 3.3                      | 3.3                       | 0.21                    | 0.21                     | 240                       | ----                    | 4/5/55                               | 7.3                     | 9.9                      | 11.6                      | 0.70                    | 0.31                     | 210                       | NT            | ----                    |                                      |
| 5/10/55  | 3.0                     | 3.3                      | 3.3                       | 0.34                    | 0.34                     | 300+                      | ----                    | 5/10/55                              | Plowed                  | Plowed                   | Plowed                    | Plowed                  | Plowed                   | Plowed                    | Plowed        | Plowed                  |                                      |
| Site 335, Lowndes Co., Ga.<br>Goldsboro LS/S (SM)  |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 4.0                     | 4.0                      | 4.0                       | 0.60                    | 0.60                     | 357                       | ----                    | 5/25/54                              | 10.9                    | 9.2                      | 10.3                      | 1.56                    | 0.33                     | 300+                      | ----          | ----                    |                                      |
| 8/5/54   | 3.0                     | 3.3                      | 3.3                       | 0.37                    | 0.37                     | 300+                      | ----                    | 8/5/54                               | 15.0                    | 6.7                      | 4.3                       | 1.19                    | 0.51                     | 300+                      | ----          | ----                    |                                      |
| 9/23/54  | 3.0                     | 3.3                      | 3.3                       | 0.21                    | 0.21                     | 300+                      | ----                    | 9/23/54                              | 15.6                    | 4.9                      | 4.5                       | 1.17                    | 0.44                     | 300+                      | ----          | ----                    |                                      |
| 1/23/55  | 3.0                     | 3.3                      | 3.3                       | 0.39                    | 0.39                     | 124                       | ----                    | 1/23/55                              | 15.1                    | 10.4                     | 9.8                       | 1.45                    | 0.94                     | 300+                      | ----          | ----                    |                                      |
| 3/2/55   | 3.0                     | 3.3                      | 3.3                       | 0.39                    | 0.39                     | 177                       | NT                      | 3/2/55                               | 20.6                    | 3.7                      | 11.7                      | 1.54                    | 0.30                     | 300+                      | NT            | ----                    |                                      |
| 3/9/55   | 3.0                     | 3.3                      | 3.3                       | 0.37                    | 0.37                     | 154                       | NT                      | 3/9/55                               | 21.7                    | 3.6                      | 8.9                       | 1.63                    | 0.78                     | 300                       | NT            | ----                    |                                      |
| 4/5/55   | 3.0                     | 3.3                      | 3.3                       | 0.51                    | 0.51                     | 149                       | ----                    | 4/5/55                               | 21.4                    | 7.6                      | 3.9                       | 1.60                    | 0.69                     | 293                       | ----          | ----                    |                                      |
| 5/11/55  | 3.0                     | 3.3                      | 3.3                       | 0.55                    | 0.55                     | 264                       | ----                    | 5/11/55                              | 12.7                    | 4.3                      | 5.5                       | 0.95                    | 0.44                     | 300-                      | ----          | ----                    |                                      |
| Site 337, Berrien Co., Ga.<br>Lynchburg LS/LS (S') |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 9.1                     | 4.0                      | 4.7                       | 0.97                    | 0.59                     | 277                       | ----                    | 5/25/54                              | 3.5                     | 7.5                      | 6.3                       | 0.83                    | 0.75                     | 258                       | ----          | ----                    |                                      |
| 8/5/54   | 9.9                     | 7.3                      | 6.2                       | 0.55                    | 0.71                     | 270                       | ----                    | 8/5/54                               | 5.9                     | 6.5                      | 6.3                       | 0.64                    | 0.65                     | 300+                      | ----          | ----                    |                                      |
| 9/23/54  | 4.9                     | 3.3                      | 3.4                       | 0.47                    | 0.32                     | 300+                      | ----                    | 9/23/54                              | 7.4                     | 4.7                      | 3.1                       | 0.69                    | 0.47                     | 292                       | ----          | ----                    |                                      |
| 1/20/55  | 11.8                    | 10.0                     | 9.5                       | 1.13                    | 0.28                     | 236                       | ----                    | 1/20/55                              | 10.6                    | 0.3                      | 10.5                      | 0.29                    | 0.33                     | 235                       | ----          | ----                    |                                      |
| 3/2/55   | 12.0                    | 10.2                     | 10.5                      | 1.16                    | 1.00                     | 304                       | NT                      | 3/2/55                               | 11.3                    | 10.6                     | 12.0                      | 1.05                    | 1.06                     | 213                       | NT            | ----                    |                                      |
| 3/9/55   | 7.5                     | 5.1                      | 5.4                       | 0.79                    | 0.60                     | 174                       | NT                      | 3/9/55                               | 6.3                     | 6.0                      | 8.0                       | 0.59                    | 0.60                     | 271                       | NT            | ----                    |                                      |
| 4/5/55   | 5.1                     | 5.3                      | 4.9                       | 0.79                    | 0.62                     | 277                       | ----                    | 4/5/55                               | 6.5                     | 3.3                      | 6.2                       | 0.60                    | 0.38                     | 275                       | ----          | ----                    |                                      |
| 5/11/55  | 4.8                     | 5.8                      | 7.2                       | 0.47                    | 0.37                     | 300                       | ----                    | 5/11/55                              | 5.0                     | 6.5                      | 7.0                       | 0.45                    | 0.65                     | 290                       | ----          | ----                    |                                      |
| Site 339, Tift Co., Ga.<br>Irregular SL/SL (SM-S)  |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 4.1                     | 9.2                      | 13.7                      | 0.43                    | 0.30                     | 300+                      | ----                    | 5/25/54                              | No data                 | No data                  | 2.4                       | 0.14                    | 0.15                     | 300+                      | ----          | ----                    |                                      |
| 8/5/54   | 5.4                     | 9.0                      | 10.8                      | 0.56                    | 0.38                     | 300+                      | ----                    | 8/5/54                               | 1.4                     | 1.4                      | 1.4                       | 0.14                    | 0.15                     | 300+                      | ----          | ----                    |                                      |
| 9/23/54  | 3.7                     | 11.4                     | 11.1                      | 0.91                    | 1.25                     | 300+                      | ----                    | 9/23/54                              | 5.7                     | 1.1                      | 9.2                       | 0.57                    | 0.65                     | 300+                      | ----          | ----                    |                                      |
| 1/20/55  | 20.7                    | 13.5                     | 16.4                      | 2.16                    | 1.48                     | 300                       | ----                    | 1/20/55                              | 12.4                    | 13.3                     | 15.3                      | 1.24                    | 1.49                     | 223                       | ----          | ----                    |                                      |
| 3/2/55   | 34.3                    | 23.9                     | 24.6                      | 2.16                    | 1.77                     | 302+                      | NT                      | 3/2/55                               | 12.6                    | 13.1                     | 15.3                      | 1.25                    | 1.41                     | 259                       | NT            | ----                    |                                      |
| 3/9/55   | 15.1                    | 15.7                     | 15.5                      | 1.53                    | 1.72                     | 300                       | NT                      | 3/9/55                               | 5.0                     | 5.1                      | 6.7                       | 0.50                    | 0.55                     | 300+                      | NT            | ----                    |                                      |
| 4/5/55   | 15.1                    | 15.1                     | 14.9                      | 1.68                    | 1.77                     | 300                       | ----                    | 4/5/55                               | 3.5                     | 5.6                      | 10.8                      | 0.25                    | 0.53                     | 300+                      | ----          | ----                    |                                      |
| 5/11/55  | 11.4                    | 12.3                     | 16.0                      | 1.19                    | 1.42                     | 302+                      | ----                    | 5/11/55                              | 3.0                     | 3.3                      | 11.9                      | 0.39                    | 0.41                     | 300+                      | ----          | ----                    |                                      |
| Site 341, Crisp Co., Ga.<br>Tifton LS/SL (SM)      |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 2.2                     | 5.2                      | 6.6                       | 0.22                    | 0.54                     | 300+                      | ----                    | 5/25/54                              | 12.6                    | 9.1                      | 7.3                       | 0.92                    | 0.93                     | 300+                      | ----          | ----                    |                                      |
| 8/5/54   | 3.7                     | 7.1                      | 9.2                       | 0.35                    | 0.73                     | 302+                      | ----                    | 8/5/54                               | 13.4                    | 3.0                      | 7.4                       | 0.93                    | 0.82                     | 300+                      | ----          | ----                    |                                      |
| 9/23/54  | 1.2                     | 6.7                      | 5.0                       | 0.22                    | 0.59                     | 300                       | ----                    | 9/23/54                              | 15.7                    | 6.9                      | 6.3                       | 1.12                    | 0.70                     | 300+                      | ----          | ----                    |                                      |
| 1/20/55  | 3.5                     | 11.9                     | 15.2                      | 0.81                    | 0.22                     | 255                       | ----                    | 1/20/55                              | 15.1                    | 11.4                     | 13.0                      | 1.93                    | 1.23                     | 155                       | ----          | ----                    |                                      |
| 3/2/55   | 15.9                    | 11.3                     | 14.3                      | 1.47                    | 1.47                     | 262                       | NT                      | 3/2/55                               | 25.0                    | 14.2                     | 15.6                      | 1.16                    | 1.27                     | 156                       | 0.82          | DRY                     |                                      |
| 3/9/55   | 3.1                     | 8.1                      | 10.5                      | 0.30                    | 0.54                     | 300                       | NT                      | 3/9/55                               | 13.6                    | 10.3                     | 10.6                      | 1.07                    | 1.12                     | 274                       | NT            | DRY                     |                                      |
| 4/5/55   | 3.8                     | 7.1                      | 13.1                      | 0.37                    | 0.50                     | 300                       | ----                    | 4/5/55                               | 15.6                    | 9.2                      | 8.3                       | 1.36                    | 0.99                     | 293                       | ----          | DRY                     |                                      |
| 5/11/55  | 2.7                     | 7.5                      | 10.3                      | 0.26                    | 0.79                     | 300+                      | ----                    | 5/11/55                              | 13.3                    | 12.1                     | 12.3                      | 0.97                    | 1.31                     | 300+                      | ----          | DRY                     |                                      |
| Site 342, Crisp Co., Ga.<br>Grady LS/SL (SC-SM)    |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 12.6                    | 9.1                      | 7.3                       | 0.92                    | 0.93                     | 300+                      | ----                    | 5/25/54                              | 12.6                    | 9.1                      | 7.3                       | 0.92                    | 0.93                     | 300+                      | ----          | ----                    |                                      |
| 8/5/54   | 13.4                    | 3.0                      | 7.4                       | 0.93                    | 0.82                     | 300+                      | ----                    | 8/5/54                               | 13.4                    | 3.0                      | 7.4                       | 0.93                    | 0.82                     | 300+                      | ----          | ----                    |                                      |
| 9/23/54  | 15.7                    | 6.9                      | 6.3                       | 1.12                    | 0.70                     | 300+                      | ----                    | 9/23/54                              | 15.7                    | 6.9                      | 6.3                       | 1.12                    | 0.70                     | 300+                      | ----          | ----                    |                                      |
| 1/20/55  | 15.1                    | 11.4                     | 13.0                      | 1.93                    | 1.23                     | 155                       | ----                    | 1/20/55                              | 15.1                    | 11.4                     | 13.0                      | 1.93                    | 1.23                     | 155                       | ----          | ----                    |                                      |
| 3/2/55   | 25.0                    | 14.2                     | 15.6                      | 1.16                    | 1.27                     | 156                       | 0.82                    | 3/2/55                               | 25.0                    | 14.2                     | 15.6                      | 1.16                    | 1.27                     | 156                       | 0.82          | DRY                     |                                      |
| 3/9/55   | 13.6                    | 10.3                     | 10.6                      | 1.07                    | 1.12                     | 274                       | NT                      | 3/9/55                               | 13.6                    | 10.3                     | 10.6                      | 1.07                    | 1.12                     | 274                       | NT            | DRY                     |                                      |
| 4/5/55   | 15.6                    | 9.2                      | 8.3                       | 1.36                    | 0.99                     | 293                       | ----                    | 4/5/55                               | 15.6                    | 9.2                      | 8.3                       | 1.36                    | 0.99                     | 293                       | ----          | DRY                     |                                      |
| 5/11/55  | 13.3                    | 12.1                     | 12.3                      | 0.97                    | 1.31                     | 300+                      | ----                    | 5/11/55                              | 13.3                    | 12.1                     | 12.3                      | 0.97                    | 1.31                     | 300+                      | ----          | DRY                     |                                      |
| Site 343, Crisp Co., Ga.<br>Lynchburg SL/SL (SM)   |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 4.9                     | 5.1                      | 8.2                       | 0.45                    | 0.54                     | 300+                      | ----                    | 5/25/54                              | 4.9                     | 10.6                     | 9.2                       | 0.46                    | 1.09                     | 300+                      | ----          | ----                    |                                      |
| 8/5/54   | 7.1                     | 6.7                      | 6.9                       | 0.69                    | 0.72                     | 300+                      | ----                    | 8/5/54                               | 6.3                     | 10.4                     | 10.5                      | 0.59                    | 1.07                     | 300+                      | ----          | ----                    |                                      |
| 9/23/54  | 3.9                     | 3.0                      | 9.6                       | 0.84                    | 0.85                     | 300                       | ----                    | 9/23/54                              | 2.1                     | 8.2                      | 8.5                       | 0.20                    | 0.85                     | 300+                      | ----          | ----                    |                                      |
| 1/20/55  | 15.0                    | 13.2                     | 14.4                      | 1.44                    | 1.41                     | 154                       | ----                    | 1/20/55                              | 10.4                    | 15.8                     | 16.7                      | 1.16                    | 1.63                     | 195                       | ----          | ----                    |                                      |
| 3/2/55   | 13.1                    | 14.1                     | 15.8                      | 1.26                    | 1.51                     | 171                       | NT                      | 3/2/55                               | 13.9                    | 17.7                     | 17.1                      | 1.30                    | 1.83                     | 187                       | 0.30          | ----                    |                                      |
| 3/9/55   | 11.2                    | 11.3                     | 12.9                      | 1.08                    | 1.21                     | 246                       | NT                      | 3/9/55                               | 5.3                     | 12.5                     | 13.4                      | 0.64                    | 1.29                     | 300+                      | NT            | ----                    |                                      |
| 4/5/55   | 10.5                    | 11.5                     | 13.0                      | 1.01                    | 1.24                     | 211                       | ----                    | 4/5/55                               | 10.7                    | 11.7                     | 10.8                      | 1.00                    | 1.21                     | 290                       | ----          | ----                    |                                      |
| 5/11/55  | 5.5                     | 9.3                      | 10.3                      | 0.23                    | 0.39                     | 300+                      | ----                    | 5/11/55                              | 1.9                     | 9.7                      | 11.3                      | 0.18                    | 1.00                     | 300+                      | ----          | ----                    |                                      |
| Site 344, Sumter Co., Ga.<br>Greenville SL/SL (SM) |                         |                          |                           |                         |                          |                           |                         |                                      |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 5/25/54  | 4.9                     | 10.6                     | 9.2                       | 0.46                    | 1.09                     | 300+                      | ----                    | 5/25/54                              | 4.9                     | 10.6                     | 9.2                       | 0.46                    | 1.09                     | 300+                      | ----          | ----                    |                                      |
| 8/5/54   | 6.3                     | 10.4                     | 10.5                      | 0.59                    | 1.07                     | 300+                      | ----                    | 8/5/54                               | 6.3                     | 10.4                     | 10.5                      | 0.59                    | 1.07                     | 300+                      | ----          | ----                    |                                      |
| 9/23/54  | 2.1                     | 8.2                      | 8.5                       | 0.20                    | 0.85                     | 300+                      | ----                    | 9/23/54                              | 2.1                     | 8.2                      | 8.5                       | 0.20                    | 0.85                     | 300+                      | ----          | ----                    |                                      |
| 1/20/55  | 10.4                    | 15.8                     | 16.7                      | 1.16                    | 1.63                     | 195                       | ----                    | 1/20/55                              | 12.4                    | 13.3                     | 15.3                      | 1.24                    | 1.49                     | 223                       | ----          | ----                    |                                      |
| 3/2/55   | 13.9                    | 17.7                     | 17.1                      | 1.30                    | 1.83                     | 187                       | 0.30                    | 3/2/55                               | 13.9                    | 17.7                     | 17.1                      | 1.30                    | 1.83                     | 187                       | 0.30          | ----                    |                                      |
| 3/9/55   | 5.3                     | 12.5                     | 13.4                      | 0.64                    | 1.29                     | 300+                      | NT                      | 3/9/55                               | 5.3                     | 12.5                     | 13.4                      | 0.64                    | 1.29                     | 300+                      | NT            | ----                    |                                      |
| 4/5/55   | 10.7                    | 11.7                     | 10.8                      | 1.00                    | 1.21                     | 290                       | ----                    | 4/5/55                               | 1                       |                          |                           |                         |                          |                           |               |                         |                                      |



Table 81a (Continued)  
Southern Region (Continued)

| Sample Date  | Soil Moisture Content |                       |                     |                     |                     | Cone Index | Remolding Index | Depth to Water Table in. | Sample Date | Soil Moisture Content |                    |                     |                     |                     | Cone Index | Remolding Index | Depth to Water Table in. |
|--|-----------------------|-----------------------|---------------------|---------------------|---------------------|------------|-----------------|--------------------------|-------------|-----------------------|--------------------|---------------------|---------------------|---------------------|------------|-----------------|--------------------------|
|  | Percent Weight Basis  |                       |                     |                     |                     |            |                 |                          |             | Percent Weight Basis  |                    |                     |                     |                     |            |                 |                          |
|  | 0- to 1-in. Depth     | 1- to 12-in. Depth    | 12- to 24-in. Depth | 24- to 36-in. Depth | 36- to 48-in. Depth |            |                 |                          |             | 0- to 1-in. Depth     | 1- to 12-in. Depth | 12- to 24-in. Depth | 24- to 36-in. Depth | 36- to 48-in. Depth |            |                 |                          |
| Site 345, Sumter Co., Ga.<br>Magnolia LS/SL (SC)     |                       |                       |                     |                     |                     |            |                 |                          |             |                       |                    |                     |                     |                     |            |                 |                          |
| 1/23/54  | 4.5                   | 9.0                   | 12.9                | 0.13                | 0.32                | 300+       | ----            | ----                     | 5/23/54     | 5.6                   | 8.4                | 14.4                | 0.53                | 0.83                | 300+       | ----            |                          |
| 2/5/54   | 5.0                   | 7.9                   | 10.8                | 0.44                | 0.72                | 300+       | ----            | ----                     | 8/5/54      | 9.6                   | 7.8                | 13.2                | 0.90                | 0.77                | 300+       | ----            |                          |
| 9/23/54  | 0.5                   | 5.2                   | 5.1                 | 0.04                | 0.64                | 300+       | ----            | ----                     | 9/23/54     | 2.2                   | 7.7                | 10.3                | 0.21                | 0.76                | 300+       | ----            |                          |
| 1/20/55  | 10.1                  | 14.1                  | 13.1                | 0.30                | 1.51                | 189        | ----            | ----                     | 1/20/55     | 18.7                  | 24.1               | 21.6                | 1.76                | 2.37                | 225        | ----            |                          |
| 2/10/55  | 12.7                  | 15.3                  | 20.2                | 1.15                | 1.50                | 197        | NT              | ----                     | 2/10/55     | 18.1                  | 20.1               | 24.3                | 1.71                | 1.98                | 157        | 0.85            |                          |
| 3/9/55   | 2.9                   | 10.4                  | 4.0                 | 0.26                | 1.07                | 235        | NT              | ----                     | 3/9/55      | 12.2                  | 15.7               | 19.7                | 1.15                | 1.64                | 300+       | NT              |                          |
| 4/1/55   | 3.0                   | 11.7                  | 23.5                | 0.71                | 1.21                | 236        | ----            | ----                     | 4/6/55      | 15.8                  | 14.0               | 15.6                | 1.49                | 1.39                | 250        | ----            |                          |
| 5/11/55  | 2.3                   | 6.8                   | 11.2                | 0.20                | 0.70                | 300+       | ----            | ----                     | 5/11/55     | 6.9                   | 15.6               | 21.0                | 3.64                | 1.54                | 300+       | ----            |                          |
| Site 347, Quitman Co., Ga.<br>Byars L/SL (CL)        |                       |                       |                     |                     |                     |            |                 |                          |             |                       |                    |                     |                     |                     |            |                 |                          |
| 1/23/54  | 24.0                  | 17.1                  | 15.5                | 1.29                | 1.63                | 300+       | ----            | ----                     | 6/23/54     | 2.2                   | 3.2                | 2.5                 | 0.19                | 0.28                | 285        | ----            |                          |
| 2/5/54   | 22.3                  | 19.2                  | 21.3                | 1.75                | 1.33                | 300+       | ----            | ----                     | 8/6/54      | 5.3                   | 5.3                | 5.7                 | 0.44                | 0.59                | 183        | ----            |                          |
| 7/23/54  | 11.4                  | 9.1                   | 7.6                 | 0.90                | 0.37                | 300+       | ----            | ----                     | 9/23/54     | 0.6                   | 0.6                | 0.5                 | 0.05                | 0.05                | 300+       | ----            |                          |
| 2/11/55  | 27.3                  | 23.7                  | 20.7                | 1.15                | 2.06                | 223        | ----            | ----                     | 11/13/54    | 4.8                   | 5.8                | 5.1                 | 0.41                | 0.50                | 212        | ----            |                          |
| 2/10/55  |                       |                       | Flooded             |                     |                     | 137        | ----            | ----                     | 1/11/55     | 9.6                   | 10.4               | 9.1                 | 0.71                | 0.90                | 119        | ----            |                          |
| 3/10/55  | 20.1                  | 25.0                  | 22.7                | 2.21                | 2.47                | 192        | 0.35            | 21                       | 2/10/55     | 9.6                   | 12.3               | 8.7                 | 0.31                | 0.98                | 130        | NT              |                          |
| 4/1/55   | 26.5                  | 13.1                  | 12.0                | 1.05                | 1.73                | 209        | ----            | 30                       | 3/10/55     | 3.2                   | 5.2                | 7.1                 | 0.27                | 2.54                | 157        | NT              |                          |
| 5/17/55  | 24.0                  | 20.9                  | 10.7                | 1.59                | 1.99                | 252        | ----            | 11                       | 4/6/55      | 4.3                   | 3.5                | 4.7                 | 0.36                | 0.30                | 224        | ----            |                          |
|  |                       |                       |                     |                     |                     |            |                 |                          | 5/17/55     | 7.4                   | 2.0                | 3.2                 | 0.63                | 0.17                | 213        | ----            |                          |
| Site 349, Barbour Co., Ala.<br>Ruston LS/LS (SM)     |                       |                       |                     |                     |                     |            |                 |                          |             |                       |                    |                     |                     |                     |            |                 |                          |
| 1/2/54   | 6.1                   | 4.1                   | 11.5                | 0.43                | 0.42                | 300+       | ----            | ----                     | 6/23/54     | 7.2                   | 25.3               | 22.7                | 0.59                | 1.93                | 296        | ----            |                          |
| 3/1/54   | 8.9                   | 10.2                  | 14.7                | 0.75                | 0.25                | 303        | ----            | ----                     | 7/5/54      | 3.4                   | 30.0               | 25.0                | 0.75                | 2.29                | 236        | ----            |                          |
| 3/23/54  | 3.0                   | 5.5                   | 7.3                 | 0.25                | 0.51                | 300        | ----            | ----                     | 9/23/54     | 7.2                   | 25.5               | 21.5                | 0.53                | 1.94                | 300+       | ----            |                          |
| 1/21/55  | 15.9                  | 19.2                  | 22.5                | 1.35                | 1.50                | 140        | ----            | ----                     | 1/21/55     | 21.1                  | 36.3               | 34.0                | 1.39                | 2.80                | 152        | ----            |                          |
| 2/10/55  | 14.7                  | 19.2                  | 20.2                | 1.42                | 1.33                | 102        | NT              | ----                     | 2/10/55     | 22.9                  | 39.5               | 32.3                | 3.34                | 3.01                | 145        | 1.07            |                          |
| 3/10/55  | 11.2                  | 20.5                  | 15.2                | 0.35                | 0.98                | 159        | NT              | ----                     | 3/10/55     | 19.3                  | 34.1               | 30.1                | 1.50                | 2.60                | 158        | NT              |                          |
| 4/1/55   | 5.9                   | 7.5                   | 13.0                | 0.74                | 0.71                | 236        | ----            | ----                     | 4/6/55      | 3.8                   | 24.4               | 31.5                | 0.77                | 1.36                | 213        | ----            |                          |
| 5/17/55  | 3.9                   | 4.3                   | 3.5                 | 0.75                | 0.40                | 255        | ----            | ----                     | 5/17/55     | 5.7                   | 26.5               | 22.7                | 0.76                | 2.03                | 280        | ----            |                          |
| Site 351, Bullock Co., Ala.<br>Tallapoosa LS/SL (CL) |                       |                       |                     |                     |                     |            |                 |                          |             |                       |                    |                     |                     |                     |            |                 |                          |
| 1/23/54  | 4.1                   | 9.1                   | 11.4                | 0.31                | 0.34                | 100        | ----            | ----                     | 6/23/54     | 13.6                  | 23.3               | 23.4                | 1.12                | 1.01                | 300+       | ----            |                          |
| 2/5/54   | 4.2                   | 13.0                  | 13.9                | 0.60                | 1.13                | 300+       | ----            | ----                     | 8/3/54      | 15.9                  | 27.4               | 29.0                | 1.31                | 2.10                | 300+       | ----            |                          |
| 9/23/54  | 4.4                   | 9.2                   | 7.5                 | 0.39                | 0.30                | 300+       | ----            | ----                     | 9/23/54     | 14.7                  | 22.1               | 21.7                | 1.04                | 1.78                | 300+       | ----            |                          |
| 11/12/54   | 9.1                   | 9.5                   | 7.7                 | 0.50                | 0.7                 | 300+       | ----            | ----                     | 1/21/55     | 32.0                  | 34.3               | 35.0                | 0.47                | 2.76                | 153        | ----            |                          |
| 1/21/55  | 19.9                  | 13.2                  | 20.2                | 1.67                | 1.1                 | 239        | ----            | 8.5                      | 2/10/55     | 30.3                  | 35.5               | 36.1                | 0.53                | 2.06                | 155        | 1.00            |                          |
| 2/10/55  | 27.0                  | 22.0                  | 22.3                | 1.43                | 1.91                | 155        | NT              | DRY                      | 3/10/55     | 24.0                  | 30.7               | 33.5                | 0.19                | 2.47                | 130        | 1.13            |                          |
| 3/10/55  | 10.2                  | 19.1                  | 12.9                | 1.06                | 1.56                | 192        | NT              | ----                     | 4/5/55      | 24.0                  | 31.4               | 30.2                | 1.29                | 2.52                | 205        | ----            |                          |
| 4/5/55   |                       | Plowed and tested     |                     |                     |                     |            |                 |                          | 5/17/55     | 25.9                  | 30.9               | 20.7                | 2.13                | 1.43                | 207        | ----            |                          |
| Site 353, Bullock Co., Ala.<br>Boswell L/SL (CL)     |                       |                       |                     |                     |                     |            |                 |                          |             |                       |                    |                     |                     |                     |            |                 |                          |
| 1/23/54  | 3.4                   | 15.7                  | 11.5                | 0.23                | 1.28                | 300+       | ----            | ----                     | 6/23/54     | 3.0                   | 5.5                | 4.9                 | 0.13                | 0.13                | 300+       | ----            |                          |
| 3/5/54   | 5.2                   | 15.7                  | 12.9                | 0.44                | 1.19                | 300+       | ----            | ----                     | 8/1/54      | 3.3                   | 1.0                | 3.2                 | 0.30                | 0.53                | 300+       | ----            |                          |
| 2/23/54  | 10.9                  | 10.9                  | 11.3                | 1.1                 | 1.79                | 300+       | ----            | ----                     | 9/23/54     | 1.0                   | 1.2                | 1.9                 | 0.09                | 0.11                | 300+       | ----            |                          |
| 1/2/55   | 27.2                  | 31.2                  | 27.3                | 2.05                | 2.72                | 251        | ----            | ----                     | 1/2/55      | 5.2                   | 3.0                | 5.3                 | 0.45                | 0.28                | 130        | ----            |                          |
| 2/10/55  | 27.8                  | 25.6                  | 33.3                | 1.05                | 2.90                | 214        | 0.90            | ----                     | 1/1/55      | 1.0                   | 12.3               | 22.9                | 1.11                | 1.10                | 294        | ----            |                          |
| 2/10/55  | 27.5                  | 23.1                  | 22.7                | 1.90                | 1.32                | 271        | NT              | ----                     | 1/1/55      | 24.1                  | 21.0               | 22.5                | 0.15                | 1.22                | 247        | NT              |                          |
| 4/1/55   | 22.9                  | 30.5                  | 21.9                | 1.69                | 2.49                | 253        | ----            | ----                     | 2/10/55     | 17.0                  | 17.4               | 13.0                | 1.52                | 1.53                | 190        | NT              |                          |
| 5/17/55  | 19.0                  | 29.4                  | 29.2                | 1.40                | 1.40                | 300        | ----            | ----                     | 4/5/55      | 13.0                  | 13.2               | 13.0                | 1.22                | 1.15                | 300+       | ----            |                          |
|  |                       |                       |                     |                     |                     |            |                 |                          | 5/17/55     | 3.2                   | 5.7                | 10.0                | 0.73                | 0.50                | 300+       | ----            |                          |
| Site 355, Dallas Co., Ala.<br>Byars SL/SL (SM)       |                       |                       |                     |                     |                     |            |                 |                          |             |                       |                    |                     |                     |                     |            |                 |                          |
| 1/23/54  | 1.5                   | 3.0                   | 1.9                 | 0.40                | 0.27                | 300+       | ----            | ----                     | 6/23/54     | 1.4                   | 3.4                | 2.1                 | 0.12                | 0.29                | 100+       | ----            |                          |
| 3/1/54   | 5.0                   | 2.1                   | 2.5                 | 0.45                | 0.32                | 300+       | ----            | ----                     | 8/1/54      | 2.7                   | 3.0                | 2.7                 | 0.124               | 0.23                | 100+       | ----            |                          |
| 1/24/54  | 3.2                   | 1.0                   | 1.0                 | 0.29                | 0.09                | 300+       | ----            | ----                     | 9/23/54     | 1.1                   | 1.1                | 1.4                 | 0.09                | 0.15                | 300+       | ----            |                          |
| 1/21/55  |                       | Ten wet to get sample |                     |                     |                     | 33         | ----            | ----                     | 11/12/54    | 2.0                   | 7.7                | 7.0                 | 0.15                | 0.40                | 200+       | ----            |                          |
| 2/10/55  | 31.1                  | 25.2                  | 27.3                | 2.60                | 2.57                | 90         | 0.40            | ----                     | 1/21/55     | 1.0                   | 17.3               | 14.6                | 1.51                | 1.40                | 123        | ----            |                          |
| 2/10/55  | 2.1                   | 20.3                  | 13.5                | 2.35                | 1.55                | 90         | 0.40            | ----                     | 2/10/55     | 16.9                  | 18.1               | 13.7                | 1.44                | 1.59                | 140        | 0.33            |                          |
| 4/1/55   | 21.3                  | 20.3                  | 21.3                | 1.37                | 1.90                | 115        | ----            | ----                     | 3/10/55     | 10.7                  | 13.1               | 12.4                | 0.29                | 1.10                | 130        | NT              |                          |
| 5/17/55  | 9.5                   | 6.4                   | 5.1                 | 0.35                | 0.53                | 300+       | ----            | ----                     | 4/5/55      | 12.5                  | 1.7                | 2.7                 | 1.00                | 1.35                | 155        | ----            |                          |
|  |                       |                       |                     |                     |                     |            |                 |                          | 5/17/55     | 1.9                   | 7.7                | 12.3                | 0.42                | 1.25                | 202        | ----            |                          |
| Site 357, Dallas Co., Ala.<br>Geiger CL/CL (CL)      |                       |                       |                     |                     |                     |            |                 |                          |             |                       |                    |                     |                     |                     |            |                 |                          |
| 1/2/54   | 15.7                  | 10.4                  | 20.4                | 1.61                | 1.50                | 300+       | ----            | ----                     | 6/23/54     | 4.2                   | 3.5                | 4.0                 | 0.55                | 0.35                | 300+       | ----            |                          |
| 3/1/54   | 17.0                  | 20.5                  | 21.0                | 1.19                | 1.76                | 300+       | ----            | ----                     | 8/1/54      | 5.7                   | 1.5                | 3.1                 | 0.54                | 0.35                | 300+       | ----            |                          |
| 9/24/54  | 13.2                  | 15.0                  | 16.1                | 1.15                | 1.1                 | 300+       | ----            | ----                     | 9/23/54     | 1.1                   | 1.6                | 3.3                 | 0.27                | 0.25                | 300+       | ----            |                          |
| 11/1/54  | 17.2                  | 17.1                  | 23.7                | 1.55                | 1.51                | 300+       | ----            | ----                     | 2/1/55      | 12.0                  | 14.1               | 15.0                | 1.10                | 1.42                | 300        | ----            |                          |
| 1/22/55  | 31.5                  | 31.0                  | 30.5                | 2.76                | 2.15                | 222        | ----            | 10                       | 2/10/55     | 20.9                  | 19.5               | 19.1                | 0.25                | 1.27                | 137        | 1.55            |                          |
| 2/11/55  | 31.2                  | 11.5                  | 31.0                | 2.72                | 2.15                | 150        | ----            | ----                     | 3/10/55     | 22.2                  | 17.1               | 17.0                | 1.07                | 1.70                | 171        | 1.26            |                          |
| 2/22/55  | 35.4                  | 27.0                  | 32.7                | 2.23                | 2.1                 | 140        | ----            | ----                     | 4/1/55      | 15.4                  | 30.4               | 29.1                | 2.29                | 1.97                | 158        | ----            |                          |
| 4/1/55   | 11.0                  | 27.3                  | 22.4                | 2.15                | 3.1                 | 170        | ----            | ----                     | 5/12/55     | 27.3                  | 24.1               | 1.5                 | 3.10                | 1.43                | 207        | ----            |                          |
| 5/17/55  | 1.0                   | 25.1                  | 21.1                | 1.53                | 1.1                 | 100+       | ----            | ----                     |             |                       |                    |                     |                     |                     |            | DRY             |                          |
|  |                       |                       |                     |                     |                     |            |                 |                          |             |                       |                    |                     |                     |                     |            |                 |                          |

Note NT = no test.

(Continued)



Table B3a (Concluded)  
Southern Region (Continued)

| Sample<br>Date                     | Soil Moisture Content  |                         |                          |                          |                          | Cone<br>Index | Remold-<br>ing<br>Index | Depth<br>to<br>water<br>Table<br>in | Sample<br>Date | Soil Moisture Content  |                         |                          |                          |                          | Cone<br>Index | Remold-<br>ing<br>Index | Depth<br>to<br>water<br>Table<br>in |
|------------------------------------|------------------------|-------------------------|--------------------------|--------------------------|--------------------------|---------------|-------------------------|-------------------------------------|----------------|------------------------|-------------------------|--------------------------|--------------------------|--------------------------|---------------|-------------------------|-------------------------------------|
|                                    | Percent Weight Basis   |                         |                          |                          |                          |               |                         |                                     |                | Percent Weight Basis   |                         |                          |                          |                          |               |                         |                                     |
|                                    | 0- to<br>4-in<br>Depth | 4- to<br>12-in<br>Depth | 12- to<br>18-in<br>Depth | 18- to<br>24-in<br>Depth | 24- to<br>30-in<br>Depth |               |                         |                                     |                | 0- to<br>4-in<br>Depth | 4- to<br>12-in<br>Depth | 12- to<br>18-in<br>Depth | 18- to<br>24-in<br>Depth | 24- to<br>30-in<br>Depth |               |                         |                                     |
| <b>Site 359, Dallas Co., Ala.</b>  |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| <b>Sumter SIL/SICL (CR)</b>        |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| 5/29/54                            | 14.4                   | 17.0                    | 13.5                     | 1.15                     | 1.53                     | 300+          | ----                    | ----                                | 5/29/54        | 19.7                   | 26.4                    | 39.7                     | 1.62                     | 2.00                     | 300+          | ----                    | ----                                |
| 8/3/54                             | 14.8                   | 17.5                    | 17.5                     | 1.21                     | 1.53                     | 300+          | ----                    | ----                                | 8/6/54         | 14.9                   | 17.4                    | 29.0                     | 1.54                     | 2.10                     | 348           | ----                    | ----                                |
| 9/24/54                            | 11.0                   | 14.1                    | 16.3                     | 0.90                     | 1.27                     | 300+          | ----                    | ----                                | 9/24/54        | 17.8                   | 23.9                    | 25.8                     | 1.38                     | 1.84                     | 300+          | ----                    | ----                                |
| 1/22/55                            | 35.0                   | 30.2                    | 29.0                     | 2.61                     | 2.72                     | 10            | ----                    | ----                                | 1/23/55        | 33.1                   | 35.6                    | 39.2                     | 2.72                     | 2.73                     | 113           | ----                    | ----                                |
| 2/11/55                            | 26.9                   | 27.4                    | 27.1                     | 2.20                     | 2.47                     | 266           | 0.96                    | ----                                | 2/11/55        | 30.5                   | 35.3                    | 41.8                     | 2.51                     | 2.75                     | 155           | 0.96                    | ----                                |
| 3/11/55                            | 21.5                   | 24.5                    | 25.7                     | 1.75                     | 2.20                     | 291           | NT                      | ----                                | 3/11/55        | 28.9                   | 35.7                    | 33.3                     | 2.30                     | 2.71                     | 153           | 1.15                    | ----                                |
| 4/6/55                             | 23.2                   | 24.3                    | 25.2                     | 1.84                     | 2.32                     | 263           | ----                    | ----                                | 4/6/55         | 30.1                   | 33.0                    | 33.9                     | 2.47                     | 2.53                     | 163           | ----                    | ----                                |
| 5/13/55                            | 20.4                   | 18.5                    | 21.0                     | 1.56                     | 1.66                     | 300+          | ----                    | ----                                | 5/13/55        | 23.6                   | 25.1                    | 30.9                     | 1.94                     | 1.93                     | 251           | ----                    | ----                                |
| <b>Site 361, Marengo Co., Ala.</b> |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| <b>Sumter SIL/SICL (CR)</b>        |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| 6/29/54                            | 12.6                   | 15.6                    | 15.7                     | 1.07                     | 1.37                     | 300+          | ----                    | ----                                | 6/30/54        | 11.9                   | 23.3                    | 18.3                     | 1.25                     | 1.97                     | 300+          | ----                    | ----                                |
| 9/5/54                             | 22.9                   | 21.5                    | 20.0                     | 1.89                     | 1.35                     | 300+          | ----                    | ----                                | 9/5/54         | 23.4                   | 31.0                    | 25.7                     | 1.97                     | 2.57                     | 340           | ----                    | ----                                |
| 9/24/54                            | 12.0                   | 14.7                    | 17.4                     | 1.02                     | 1.00                     | 300+          | ----                    | ----                                | 9/24/54        | 15.0                   | 21.7                    | 21.4                     | 1.25                     | 1.30                     | 300+          | ----                    | ----                                |
| 1/22/55                            | 29.3                   | 32.0                    | 25.7                     | 2.54                     | 2.80                     | 221           | ----                    | ----                                | 1/22/55        | 30.8                   | 35.1                    | 32.6                     | 2.59                     | 2.74                     | 183           | ----                    | ----                                |
| 2/11/55                            | 22.0                   | 32.2                    | 24.0                     | 2.49                     | 1.92                     | 240           | 1.03                    | ----                                | 2/11/55        | 31.6                   | 35.3                    | 31.9                     | 2.65                     | 2.32                     | 197           | 1.00                    | ----                                |
| 3/11/55                            | 24.0                   | 25.9                    | 25.1                     | 2.04                     | 2.37                     | 243           | NT                      | ----                                | 3/11/55        | 22.8                   | 27.3                    | 30.7                     | 1.92                     | 2.17                     | 225           | NT                      | ----                                |
| 4/6/55                             | 22.9                   | 25.6                    | 25.7                     | 1.94                     | 2.24                     | 235           | ----                    | ----                                | 4/7/55         | 23.0                   | 30.3                    | 11.1                     | 2.44                     | 2.67                     | 170           | ----                    | ----                                |
| 5/13/55                            | 17.9                   | 15.5                    | 20.1                     | 1.53                     | 1.45                     | 300+          | ----                    | ----                                | 5/13/55        | 20.1                   | 24.4                    | 25.9                     | 1.69                     | 2.62                     | 300+          | ----                    | ----                                |
| <b>Site 364, Marengo Co., Ala.</b> |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| <b>Eutaw CL/CL (CL)</b>            |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| 1/29/54                            | 12.0                   | 15.3                    | 17.4                     | 1.01                     | 1.35                     | 300+          | ----                    | ----                                | 4/30/54        | 4.9                    | 5.5                     | 5.4                      | 0.44                     | 0.51                     | 300+          | ----                    | ----                                |
| 3/5/54                             | 13.7                   | 18.6                    | 18.5                     | 1.17                     | 1.62                     | 300+          | ----                    | ----                                | 3/5/54         | 5.3                    | 5.3                     | 4.2                      | 0.47                     | 0.50                     | 300+          | ----                    | ----                                |
| 7/24/54                            | 12.3                   | 16.7                    | 17.3                     | 1.03                     | 1.43                     | 300+          | ----                    | ----                                | 7/24/54        | 2.7                    | 2.6                     | 3.6                      | 0.4                      | 0.24                     | 300+          | ----                    | ----                                |
| 1/23/55                            | 30.3                   | 29.2                    | 30.5                     | 2.55                     | 2.59                     | 195           | ----                    | ----                                | 1/23/55        | 15.7                   | 14.2                    | 14.5                     | 1.39                     | 1.33                     | 302           | ----                    | ----                                |
| 2/11/55                            | 30.7                   | 29.7                    | 30.0                     | 2.58                     | 2.54                     | 160           | 1.00                    | ----                                | 2/11/55        | 14.3                   | 13.0                    | 15.3                     | 1.27                     | 1.22                     | 195           | NT                      | 35                                  |
| 3/11/55                            | 26.3                   | 27.0                    | 23.0                     | 2.21                     | 1.40                     | 173           | 1.27                    | ----                                | 3/11/55        | 8.9                    | 13.2                    | 14.4                     | 0.79                     | 1.24                     | 192           | NT                      | 35                                  |
| 4/7/55                             | 33.2                   | 29.5                    | 31.1                     | 2.75                     | 2.52                     | 144           | ----                    | ----                                | 4/7/55         | 11.8                   | 12.3                    | 13.7                     | 1.05                     | 1.20                     | 173           | ----                    | 30                                  |
| 5/13/55                            | 26.1                   | 24.0                    | 27.1                     | 2.19                     | 2.13                     | 124           | ----                    | ----                                | 5/13/55        | 6.4                    | 9.9                     | 11.4                     | 0.57                     | 0.93                     | 224           | ----                    | DRY                                 |
| water in depressions on 4/7/55     |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| <b>Site 365, Sumter Co., Ala.</b>  |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| <b>Huckabee IS/IS (CR)</b>         |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| 6/30/54                            | 2.6                    | 3.9                     | 5.4                      | 0.24                     | 0.38                     | 300+          | ----                    | ----                                | 6/30/54        | 2.6                    | 3.9                     | 5.4                      | 0.24                     | 0.38                     | 300+          | ----                    | ----                                |
| 8/6/54                             | 4.8                    | 5.0                     | 7.7                      | 0.45                     | 0.49                     | 300           | ----                    | ----                                | 8/6/54         | 4.8                    | 5.0                     | 7.7                      | 0.45                     | 0.49                     | 300           | ----                    | ----                                |
| 9/24/54                            | 1.9                    | 3.5                     | 3.9                      | 0.18                     | 0.34                     | 300+          | ----                    | ----                                | 9/24/54        | 1.9                    | 3.5                     | 3.9                      | 0.18                     | 0.34                     | 300+          | ----                    | ----                                |
| 1/22/55                            | 16.4                   | 17.4                    | 16.1                     | 1.74                     | 1.69                     | 113           | ----                    | ----                                | 1/22/55        | 16.4                   | 17.4                    | 16.1                     | 1.74                     | 1.69                     | 113           | ----                    | ----                                |
| 2/11/55                            | 22.9                   | 20.9                    | 20.1                     | 1.96                     | 2.03                     | 95            | 1.26                    | ----                                | 2/11/55        | 22.9                   | 20.9                    | 20.1                     | 1.96                     | 2.03                     | 95            | 1.26                    | ----                                |
| 3/11/55                            | 15.3                   | 16.4                    | 15.8                     | 1.49                     | 1.59                     | 167           | 1.20                    | ----                                | 3/11/55        | 15.3                   | 16.4                    | 15.8                     | 1.49                     | 1.59                     | 167           | 1.20                    | ----                                |
| 4/7/55                             | 21.4                   | 20.7                    | 17.2                     | 2.00                     | 2.01                     | 83            | ----                    | ----                                | 4/7/55         | 21.4                   | 20.7                    | 17.2                     | 2.00                     | 2.01                     | 83            | ----                    | ----                                |
| 5/13/55                            | 12.9                   | 11.6                    | 13.0                     | 1.21                     | 1.22                     | 223           | ----                    | ----                                | 5/13/55        | 12.9                   | 11.6                    | 13.0                     | 1.21                     | 1.22                     | 223           | ----                    | ----                                |
| Some timber cut before 9/24/54     |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| <b>Site 368, Sumter Co., Ala.</b>  |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| <b>Bobb SIL/IL (CL)</b>            |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| 1/5/55                             | 13.2                   | 13.7                    | 13.7                     | 1.11                     | 1.21                     | 100+          | ----                    | ----                                | 1/30/54        | 9.3                    | 12.7                    | 14.9                     | 0.75                     | 1.25                     | 300+          | ----                    | ----                                |
| 5/5/55                             | 11.1                   | 11.7                    | 11.6                     | 1.05                     | 1.05                     | 300+          | ----                    | ----                                | 5/5/55         | 6.8                    | 12.2                    | 16.8                     | 0.62                     | 1.20                     | 300+          | ----                    | ----                                |
| 9/24/54                            | 10.4                   | 11.7                    | 11.6                     | 1.04                     | 0.73                     | 300+          | ----                    | ----                                | 9/24/54        | 4.2                    | 7.9                     | 10.4                     | 0.38                     | 0.73                     | 300+          | ----                    | ----                                |
| 1/22/55                            | 24.1                   | 27.5                    | 27.4                     | 2.47                     | 2.46                     | 155           | ----                    | ----                                | 1/22/55        | 20.5                   | 23.7                    | 23.5                     | 1.77                     | 2.33                     | 166           | ----                    | ----                                |
| 2/11/55                            | 11.3                   | 10.2                    | 10.4                     | 0.37                     | 0.72                     | 53            | ----                    | ----                                | 2/11/55        | 11.9                   | 23.9                    | 23.9                     | 1.93                     | 3.35                     | 154           | 0.95                    | ----                                |
| 3/11/55                            | 47.2                   | 10.0                    | 10.4                     | 0.51                     | 2.70                     | 45            | 0.50                    | 1                                   | 3/11/55        | 15.4                   | 19.1                    | 22.0                     | 1.40                     | 1.88                     | 235           | 1.00                    | ----                                |
| 4/7/55                             | 44.3                   | 16.4                    | 16.4                     | 0.37                     | 2.65                     | 50            | ----                    | ----                                | 4/7/55         | 13.3                   | 22.2                    | 24.6                     | 1.70                     | 2.18                     | 183           | ----                    | ----                                |
| 5/13/55                            | 29.0                   | 21.7                    | 20.1                     | 2.33                     | 1.95                     | 1.9           | ----                    | 57                                  | 5/13/55        | 7.1                    | 11.9                    | 19.4                     | 0.64                     | 1.56                     | 300+          | ----                    | ----                                |
| <b>Site 369, Sumter Co., Ala.</b>  |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |
| <b>Guthbert SIL/SICL (CL)</b>      |                        |                         |                          |                          |                          |               |                         |                                     |                |                        |                         |                          |                          |                          |               |                         |                                     |



### Northeastern Region

(Continued)

\* Vibrated "molding" test.

\*\* Penetrometer stopped by stones.

† Measurement of 0- to 1-in. layer.



Table B-4 (Continued)

Northeastern Region (Continued)

| Sample Date | Soil Moisture Content |             |             |             |              | Core Index | Moisture Index | Depth to Water Table in. | Sample Date | Soil Moisture Content |             |             |             |              | Core Index | Moisture Index | Depth to Water Table in. |
|-------------|-----------------------|-------------|-------------|-------------|--------------|------------|----------------|--------------------------|-------------|-----------------------|-------------|-------------|-------------|--------------|------------|----------------|--------------------------|
|             | Percent Weight Basis  |             |             |             |              |            |                |                          |             | Percent Weight Basis  |             |             |             |              |            |                |                          |
|             | 0- to 1-in.           | 1- to 2-in. | 2- to 4-in. | 4- to 8-in. | 8- to 16-in. |            |                |                          |             | 0- to 1-in.           | 1- to 2-in. | 2- to 4-in. | 4- to 8-in. | 8- to 16-in. |            |                |                          |
| 7/2/54      | 22.7                  | 12.7        | 10.7        | 1.7         | 1.00         | -----      | -----          | -----                    | 7/2/54      | 25.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 8/2/54      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 8/2/54      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 9/2/54      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 9/2/54      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 10/2/54     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 10/2/54     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 11/2/54     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 11/2/54     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 12/2/54     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 12/2/54     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 1/3/55      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 1/3/55      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 2/3/55      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 2/3/55      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 3/3/55      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 3/3/55      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 4/3/55      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 4/3/55      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 5/3/55      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 5/3/55      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 6/3/55      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 6/3/55      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 7/3/55      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 7/3/55      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 8/3/55      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 8/3/55      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 9/3/55      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 9/3/55      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 10/3/55     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 10/3/55     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 11/3/55     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 11/3/55     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 12/3/55     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 12/3/55     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 1/4/56      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 1/4/56      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 2/4/56      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 2/4/56      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 3/4/56      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 3/4/56      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 4/4/56      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 4/4/56      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 5/4/56      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 5/4/56      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 6/4/56      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 6/4/56      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 7/4/56      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 7/4/56      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 8/4/56      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 8/4/56      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 9/4/56      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 9/4/56      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 10/4/56     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 10/4/56     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 11/4/56     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 11/4/56     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 12/4/56     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 12/4/56     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 1/5/57      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 1/5/57      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 2/5/57      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 2/5/57      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 3/5/57      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 3/5/57      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 4/5/57      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 4/5/57      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 5/5/57      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 5/5/57      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 6/5/57      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 6/5/57      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 7/5/57      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 7/5/57      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 8/5/57      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 8/5/57      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 9/5/57      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 9/5/57      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 10/5/57     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 10/5/57     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 11/5/57     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 11/5/57     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 12/5/57     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 12/5/57     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 1/6/58      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 1/6/58      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 2/6/58      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 2/6/58      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 3/6/58      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 3/6/58      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 4/6/58      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 4/6/58      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 5/6/58      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 5/6/58      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 6/6/58      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 6/6/58      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 7/6/58      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 7/6/58      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 8/6/58      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 8/6/58      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 9/6/58      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 9/6/58      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 10/6/58     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 10/6/58     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 11/6/58     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 11/6/58     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 12/6/58     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 12/6/58     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 1/7/59      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 1/7/59      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 2/7/59      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 2/7/59      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 3/7/59      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 3/7/59      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 4/7/59      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 4/7/59      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 5/7/59      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 5/7/59      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 6/7/59      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 6/7/59      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 7/7/59      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 7/7/59      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 8/7/59      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 8/7/59      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 9/7/59      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 9/7/59      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 10/7/59     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 10/7/59     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 11/7/59     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 11/7/59     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 12/7/59     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 12/7/59     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 1/8/60      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 1/8/60      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 2/8/60      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 2/8/60      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 3/8/60      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 3/8/60      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 4/8/60      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 4/8/60      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 5/8/60      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 5/8/60      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 6/8/60      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 6/8/60      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 7/8/60      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 7/8/60      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 8/8/60      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 8/8/60      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 9/8/60      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 9/8/60      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 10/8/60     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 10/8/60     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 11/8/60     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 11/8/60     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 12/8/60     | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 12/8/60     | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 1/9/61      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 1/9/61      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 2/9/61      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 2/9/61      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 3/9/61      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 3/9/61      | 35.7                  | 13.0        | 23.0        | 2.7         | 2.15         | 127        | -----          | -----                    |
| 4/9/61      | 1.7                   | 1.7         | 1.7         | 1.7         | 1.7          | -----      | -----          | -----                    | 4/9/61      | 35                    |             |             |             |              |            |                |                          |

(Continued)

Note: NT = no test.

\*\* Penetrometer stopped by stones.

† Measurement of 0- to 6-in. layer.



Table B3b (Continued)  
Northeastern Region (Continued)

| Sample Date  | Soil Moisture Content   |                          |                           |                         |                          | Cone Index | Remold-<br>ing Index | Depth to<br>Water<br>Table<br>in. | Sample Date | Soil Moisture Content     |                         |                          |                           |                         | Cone Index | Remold-<br>ing Index | Depth to<br>Water<br>Table<br>in. |                          |                           |  |  |
|--|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|------------|----------------------|-----------------------------------|-------------|---------------------------|-------------------------|--------------------------|---------------------------|-------------------------|------------|----------------------|-----------------------------------|--------------------------|---------------------------|--|--|
|  | Percent Weight Basis    |                          |                           |                         |                          |            |                      |                                   |             | Percent Weight Basis      |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
|  | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth |            |                      |                                   |             | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth |            |                      |                                   | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth |  |  |
| Site 29, Indiana Co., Pa.<br>Ernest Silt/Sil (CL)      |                         |                          |                           |                         |                          |            |                      |                                   |             |                           |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
| 7/8/54   | 36.0                    | 27.7                     | 23.5                      | 2.63                    | 2.38                     | 307        | ----                 | ----                              | 7/8/54      | 27.4                      | 22.5                    | 20.4                     | 1.92                      | 1.91                    | 287        | ----                 | ----                              |                          |                           |  |  |
| 8/3/54   | 31.6                    | 29.9                     | 27.5                      | 2.31                    | 2.43                     | 159        | 0.62†                | ----                              | 8/3/54      | 34.1                      | 27.7                    | 24.2                     | 2.39                      | 2.35                    | 130        | 0.58                 | ----                              |                          |                           |  |  |
| 8/18/54  | 35.5                    | 21.2                     | 22.1                      | 2.59                    | 1.82                     | 210        | ----                 | ----                              | 8/18/54     | 33.3                      | 27.6                    | 15.3                     | 2.33                      | 2.35                    | 149        | ----                 | ----                              |                          |                           |  |  |
| 9/14/54  | 31.1                    | 24.8                     | 30.1                      | 2.27                    | 2.13                     | 166        | ----                 | ----                              | 9/14/54     | 32.2                      | 27.3                    | 25.0                     | 2.25                      | 2.32                    | 166        | ----                 | ----                              |                          |                           |  |  |
| 11/10/54   | 34.7                    | 22.9                     | 23.1                      | 2.53                    | 1.97                     | 157        | ----                 | ----                              | 11/10/54    | 35.6                      | 27.5                    | 25.4                     | 2.51                      | 2.34                    | 140        | ----                 | ----                              |                          |                           |  |  |
| 3/15/55  | 28.7                    | 24.1                     | 23.5                      | 2.09                    | 2.05                     | 134        | ----                 | ----                              | 3/15/55     | 37.4                      | 29.0                    | 26.1                     | 2.68                      | 2.46                    | 190        | ----                 | ----                              |                          |                           |  |  |
| 4/19/55  | 36.4                    | 23.1                     | 22.9                      | 2.66                    | 1.96                     | 132        | NT**                 | 20                                | 4/19/55     | 35.6                      | 26.1                    | 18.4                     | 2.40                      | 2.22                    | 144        | 0.64                 | ----                              |                          |                           |  |  |
| 5/16/55  | 19.6                    | 23.6                     | 30.2                      | 1.43                    | 2.02                     | 278        | NT†                  | ----                              | 5/17/55     | 22.6                      | 22.0                    | 23.9                     | 1.58                      | 1.87                    | 300        | ----                 | ----                              |                          |                           |  |  |
| Site 31, Armstrong Co., Pa.<br>Ernest Silt/Sil (CL-MG) |                         |                          |                           |                         |                          |            |                      |                                   |             |                           |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
| 7/8/54   | 23.3                    | 21.3                     | 23.8                      | 2.00                    | 2.04                     | 194        | ----                 | ----                              | 7/8/54      | 29.1                      | 25.0                    | 25.7                     | 2.42                      | 2.15                    | 193        | ----                 | ----                              |                          |                           |  |  |
| 8/3/54   | 22.1                    | 28.6                     | 28.0                      | 1.90                    | 2.75                     | 211        | ----                 | ----                              | 8/3/54      | 33.1                      | 29.5                    | 24.0                     | 2.75                      | 2.19                    | 212        | ----                 | ----                              |                          |                           |  |  |
| 8/18/54  | 25.3                    | 22.8                     | 29.1                      | 2.18                    | 2.19                     | 172        | ----                 | ----                              | 8/18/54     | 34.3                      | 29.3                    | 27.1                     | 2.70                      | 2.18                    | 161        | ----                 | ----                              |                          |                           |  |  |
| 9/14/54  | 24.4                    | 20.5                     | 25.5                      | 2.10                    | 1.97                     | 169        | ----                 | ----                              | 9/14/54     | 31.8                      | 27.8                    | 25.4                     | 2.64                      | 2.39                    | 220        | ----                 | ----                              |                          |                           |  |  |
| 11/10/54   | 26.0                    | 24.2                     | 24.3                      | 2.24                    | 2.35                     | 161        | 0.58                 | ----                              | 11/10/54    | 33.1                      | 27.5                    | 28.5                     | 2.75                      | 2.36                    | 151        | 0.70                 | ----                              |                          |                           |  |  |
| 3/15/55  | 32.3                    | 24.1                     | 23.5                      | 2.27                    | 2.63                     | 153        | 0.53                 | ----                              | 3/15/55     | 34.0                      | 29.3                    | 27.8                     | 2.82                      | 2.52                    | 194        | 0.75                 | ----                              |                          |                           |  |  |
| 4/19/55  | 26.4                    | 25.0                     | 27.5                      | 2.27                    | 2.40                     | 160        | ----                 | ----                              | 4/19/55     | 30.0                      | 27.1                    | 24.4                     | 2.49                      | 2.33                    | 176        | ----                 | ----                              |                          |                           |  |  |
| 5/17/55  | 11.3                    | 11.5                     | 25.4                      | 0.71                    | 1.10                     | 300        | NT                   | ----                              | 5/17/55     | 26.3                      | 24.1                    | 22.9                     | 2.18                      | 2.07                    | 300        | NT                   | ----                              |                          |                           |  |  |
| Site 33, Armstrong Co., Pa.<br>Philo Silt/Sil (MG)     |                         |                          |                           |                         |                          |            |                      |                                   |             |                           |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
| 7/8/54   | 23.3                    | 24.0                     | 19.6                      | 1.68                    | 1.99                     | 300        | ----                 | ----                              | 7/8/54      | 4.5                       | 46.6                    | 35.2                     | 3.86                      | 3.96                    | 160        | ----                 | ----                              |                          |                           |  |  |
| 8/3/54   | 27.2                    | 20.2                     | 15.0                      | 1.96                    | 1.68                     | 300        | ----                 | ----                              | 8/3/54      | 87.2                      | 68.3                    | 41.8                     | 3.49                      | 5.85                    | 88         | 0.51                 | ----                              |                          |                           |  |  |
| 8/18/54  | 27.7                    | 22.6                     | 26.0                      | 1.99                    | 1.86                     | 300        | ----                 | ----                              | 8/18/54     | 40.9                      | 61.9                    | 45.1                     | 1.64                      | 5.26                    | 33         | ----                 | ----                              |                          |                           |  |  |
| 9/14/54  | 22.7                    | 20.8                     | 19.5                      | 1.03                    | 1.73                     | 292        | ----                 | ----                              | 9/14/54     | 90.1                      | 39.0                    | 34.1                     | 3.60                      | 3.31                    | 10         | ----                 | ----                              |                          |                           |  |  |
| 11/10/54   | 36.1                    | 30.4                     | 27.5                      | 2.30                    | 2.52                     | 201        | 0.66                 | ----                              | 11/10/54    | 115.4                     | 62.0                    | 37.9                     | 4.62                      | 5.27                    | 103        | ----                 | ----                              |                          |                           |  |  |
| 3/15/55  | 38.2                    | 31.4                     | 30.4                      | 2.75                    | 2.01                     | 183        | 0.56                 | ----                              | 3/15/55     | 35.4                      | 48.8                    | 36.7                     | 3.42                      | 4.15                    | 147        | 0                    | ----                              |                          |                           |  |  |
| 4/19/55  | 37.3                    | 28.9                     | 26.3                      | 2.69                    | 2.40                     | 165        | ----                 | ----                              | 4/19/55     | 120.0                     | 61.3                    | 47.9                     | 5.20                      | 5.21                    | 52         | 0.27                 | 1                                 |                          |                           |  |  |
| 5/17/55  | 27.2                    | 24.6                     | 22.3                      | 1.96                    | 2.04                     | 300        | NT                   | ----                              | 5/17/55     | 122.1                     | 58.5                    | 37.2                     | 4.88                      | 4.97                    | 145        | 10                   | ----                              |                          |                           |  |  |
| Site 35, Armstrong Co., Pa.<br>Philo Silt/Sil (MG)     |                         |                          |                           |                         |                          |            |                      |                                   |             |                           |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
| 7/8/54   | 33.3                    | 29.6                     | 25.3                      | 2.26                    | 2.49                     | 269        | ----                 | ----                              | 7/9/54      | 35.1                      | 37.0                    | 37.7                     | 2.42                      | 2.59                    | 117        | ----                 | ----                              |                          |                           |  |  |
| 8/3/54   | 35.0                    | 27.3                     | 23.6                      | 2.38                    | 2.29                     | 272        | ----                 | ----                              | 8/4/54      | 21.7                      | 20.5                    | 28.9                     | 1.50                      | 1.52                    | 287        | ----                 | ----                              |                          |                           |  |  |
| 8/18/54  | 29.5                    | 20.4                     | 22.5                      | 1.74                    | 1.71                     | 300        | ----                 | ----                              | 8/18/54     | 24.6                      | 22.1                    | 28.4                     | 1.70                      | 1.64                    | 302        | ----                 | ----                              |                          |                           |  |  |
| 9/14/54  | 24.3                    | 24.3                     | 19.4                      | 1.65                    | 2.04                     | 300        | ----                 | ----                              | 9/14/54     | 16.4                      | 16.2                    | 29.6                     | 1.13                      | 1.20                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 11/10/54   | 37.0                    | 29.8                     | 25.7                      | 2.52                    | 2.50                     | 247        | 0.72                 | ----                              | 11/11/54    | 48.1                      | 39.2                    | 45.2                     | 3.23                      | 2.92                    | 106        | 0.67                 | ----                              |                          |                           |  |  |
| 3/15/55  | 41.7                    | 34.2                     | 30.7                      | 2.94                    | 2.07                     | 210        | ----                 | 9                                 | 3/15/55     | 14.8                      | 41.2                    | 35.3                     | 3.09                      | 3.05                    | 117        | 3                    | ----                              |                          |                           |  |  |
| 4/19/55  | 40.0                    | 33.3                     | 33.7                      | 2.72                    | 2.80                     | 158        | 0.46                 | 12                                | 4/20/55     | 48.5                      | 45.0                    | 42.5                     | 3.35                      | 3.33                    | 74         | 0.66                 | 4                                 |                          |                           |  |  |
| 5/17/55  | 34.4                    | 27.9                     | 23.3                      | 2.34                    | 2.51                     | 241        | ----                 | ----                              | 5/17/55     | 44.0                      | 37.0                    | 40.6                     | 3.04                      | 2.74                    | 147        | 18                   | ----                              |                          |                           |  |  |
| Site 37, Crawford Co., Pa.<br>Holly Silt/Sil (MG)      |                         |                          |                           |                         |                          |            |                      |                                   |             |                           |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
| 7/9/54   | 25.8                    | 26.2                     | 33.0                      | 2.12                    | 1.91                     | 109        | ----                 | ----                              | 7/9/54      | 29.4                      | 32.6                    | 28.3                     | 2.29                      | 2.31                    | 170        | ----                 | ----                              |                          |                           |  |  |
| 8/4/54   | 26.6                    | 26.5                     | 31.4                      | 1.69                    | 1.93                     | 300        | ----                 | ----                              | 8/4/54      | 16.4                      | 23.9                    | 24.2                     | 1.28                      | 1.70                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 8/18/54  | 18.4                    | 27.8                     | 31.7                      | 1.51                    | 1.74                     | 300        | ----                 | ----                              | 8/18/54     | 22.2                      | 26.6                    | 26.7                     | 1.73                      | 1.82                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 9/14/54  | 20.2                    | 25.0                     | 27.8                      | 1.66                    | 1.82                     | 300        | ----                 | ----                              | 9/14/54     | 12.3                      | 21.4                    | 22.6                     | 0.96                      | 1.52                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 11/11/54   | 27.4                    | 38.6                     | 44.7                      | 2.25                    | 2.82                     | 78         | 0.62                 | ----                              | 11/11/54    | 34.0                      | 42.9                    | 45.2                     | 2.65                      | 3.05                    | 100        | 0.50                 | ----                              |                          |                           |  |  |
| 3/15/55  | 25.1                    | 35.7                     | 45.2                      | 2.30                    | 2.64                     | 127        | ----                 | ----                              | 3/15/55     | 37.2                      | 44.4                    | 47.3                     | 2.90                      | 3.15                    | 127        | ----                 | ----                              |                          |                           |  |  |
| 4/20/55  | 31.4                    | 34.4                     | 44.1                      | 2.57                    | 2.80                     | 131        | 0.59                 | 24                                | 4/20/55     | 36.1                      | 43.4                    | 43.5                     | 2.82                      | 3.08                    | 73         | 0.72                 | ----                              |                          |                           |  |  |
| 5/17/55  | 25.4                    | 32.5                     | 35.4                      | 2.08                    | 2.30                     | 193        | ----                 | DRY                               | 5/17/55     | 29.4                      | 37.9                    | 40.5                     | 2.30                      | 2.69                    | 183        | ----                 | ----                              |                          |                           |  |  |
| Site 39, Crawford Co., Pa.<br>Braeaville L/L (CL-MG)   |                         |                          |                           |                         |                          |            |                      |                                   |             |                           |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
| 7/9/54   | 24.1                    | 22.1                     | 16.4                      | 1.76                    | 1.86                     | 274        | ----                 | ----                              | 7/9/54      | 22.3                      | 22.1                    | 24.4                     | 1.69                      | 1.68                    | 244        | ----                 | ----                              |                          |                           |  |  |
| 8/4/54   | 17.5                    | 15.3                     | 11.3                      | 1.33                    | 1.29                     | 300        | ----                 | ----                              | 8/4/54      | 16.4                      | 19.2                    | 15.7                     | 1.21                      | 1.46                    | 240        | ----                 | ----                              |                          |                           |  |  |
| 8/18/54  | 20.3                    | 14.9                     | 13.9                      | 1.43                    | 1.25                     | 300        | ----                 | ----                              | 8/18/54     | 20.3                      | 20.2                    | 27.0                     | 1.48                      | 1.54                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 9/14/54  | 13.0                    | 14.4                     | 10.8                      | 0.95                    | 1.21                     | 300        | ----                 | ----                              | 9/14/54     | 13.3                      | 20.1                    | 25.0                     | 0.98                      | 1.53                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 11/11/54   | 33.3                    | 29.6                     | 20.6                      | 2.43                    | 2.15                     | 212        | 0.47†                | ----                              | 11/11/54    | 33.0                      | 35.1                    | 41.7                     | 2.44                      | 2.68                    | 137        | 0.68                 | ----                              |                          |                           |  |  |
| 3/15/55  | 35.2                    | 29.7                     | 26.7                      | 2.57                    | 2.49                     | 212        | ----                 | ----                              | 3/15/55     | 35.0                      | 34.1                    | 35.5                     | 2.31                      | 2.59                    | 168        | 0.79                 | ----                              |                          |                           |  |  |
| 4/20/55  | 27.3                    | 38.8                     | 26.9                      | 2.03                    | 3.36                     | 121        | ----                 | ----                              | 4/20/55     | 31.4                      | 28.0                    | 32.1                     | 2.32                      | 2.13                    | 123        | NT                   | ----                              |                          |                           |  |  |
| 5/17/55  | 24.6                    | 23.5                     | 25.6                      | 1.90                    | 1.97                     | 300        | NT†                  | ----                              | 5/17/55     | 16.1                      | 22.4                    | 30.7                     | 1.19                      | 1.70                    | 253        | NT                   | ----                              |                          |                           |  |  |
| Flowed before 4/20/55                                  |                         |                          |                           |                         |                          |            |                      |                                   |             |                           |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
| Site 41, Crawford Co., Pa.<br>Tioga Silt/Sil (MG)      |                         |                          |                           |                         |                          |            |                      |                                   |             |                           |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
| 7/9/54   | 23.5                    | 15.1                     | 14.3                      | 1.67                    | 1.25                     | 280        | ----                 | ----                              | 7/9/54      | 27.1                      | 25.8                    | 22.1                     | 2.01                      | 1.91                    | 251        | ----                 | ----                              |                          |                           |  |  |
| 8/4/54   | 13.6                    | 9.6                      | 10.6                      | 0.97                    | 0.90                     | 300        | ----                 | ----                              | 8/4/54      | 30.0                      | 15.3                    | 15.4                     | 1.50                      | 1.21                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 8/18/54  | 18.2                    | 10.0                     | 9.9                       | 1.29                    | 0.83                     | 300        | ----                 | ----                              | 8/18/54     | 14.1                      | 13.0                    | 14.4                     | 1.04                      | 0.98                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 9/14/54  | 18.8                    | 12.4                     | 10.5                      | 1.33                    | 1.03                     | 300        | ----                 | ----                              | 9/14/54     | 14.5                      | 15.5                    | 13.7                     | 1.01                      | 1.15                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 11/11/54   | 36.9                    | 37.7                     | 30.1                      | 2.62                    | 3.13                     | 155        | 0.53                 | ----                              | 11/11/54    | 34.6                      | 32.2                    | 29.3                     | 2.56                      | 2.38                    | 189        | 0.60                 | ----                              |                          |                           |  |  |
| 3/15/55  | 34.6                    | 26.4                     | 28.1                      | 2.46                    | 2.19                     | 159        | 0.55                 | ----                              | 3/15/55     | 32.3                      | 34.1                    | 28.7                     | 2.39                      | 2.54                    | 200        | 0.71                 | ----                              |                          |                           |  |  |
| 4/20/55  | 33.6                    | 29.7                     | 27.1                      | 2.39                    | 2.47                     | 125        | ----                 | ----                              | 4/20/55     | 27.7                      | 29.3                    | 27.5                     | 2.05                      | 2.17                    | 157        | ----                 | ----                              |                          |                           |  |  |
| 5/17/55  | 23.7                    | 25.0                     | 22.6                      | 1.68                    | 2.08                     | 260        | NT                   | ----                              | 5/17/55     | 25.3                      | 26.5                    | 25.4                     | 1.47                      | 1.96                    | 254        | NT                   | ----                              |                          |                           |  |  |
| Site 43, Crawford Co., Pa.<br>Tioga Silt/Sil (MG)      |                         |                          |                           |                         |                          |            |                      |                                   |             |                           |                         |                          |                           |                         |            |                      |                                   |                          |                           |  |  |
| 7/9/54   | 23.5                    | 15.1                     | 14.3                      | 1.67                    | 1.25                     | 280        | ----                 | ----                              | 7/9/54      | 27.1                      | 25.8                    | 22.1                     | 2.01                      | 1.91                    | 251        | ----                 | ----                              |                          |                           |  |  |
| 8/4/54   | 13.6                    | 9.6                      | 10.6                      | 0.97                    | 0.90                     | 300        | ----                 | ----                              | 8/4/54      | 30.0                      | 15.3                    | 15.4                     | 1.50                      | 1.21                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 8/18/54  | 18.2                    | 10.0                     | 9.9                       | 1.29                    | 0.83                     | 300        | ----                 | ----                              | 8/18/54     | 14.1                      | 13.0                    | 14.4                     | 1.04                      | 0.98                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 9/14/54  | 18.8                    | 12.4                     | 10.5                      | 1.33                    | 1.03                     | 300        | ----                 | ----                              | 9/14/54     | 14.5                      | 15.5                    | 13.7                     | 1.01                      | 1.15                    | 300        | ----                 | ----                              |                          |                           |  |  |
| 11/11/54   | 36.9                    | 37.7                     | 30.1                      | 2.62                    | 3.13                     | 155        | 0.53                 | ----                              | 11/11/54    | 34.6                      | 32.2                    | 29.3                     | 2.56                      | 2.38                    | 189        | 0.60                 | ----                              |                          |                           |  |  |
| 3/15/55  | 34.6                    | 26.4                     | 28.1                      | 2.46                    | 2.19                     | 159        | 0.55                 | ----                              | 3/15/55     | 32.3                      | 34.1                    | 28.7                     | 2.39                      | 2.54                    | 200        | 0.71                 | ----                              |                          |                           |  |  |
| 4/20/55  | 33.6                    | 29.7                     | 27.1                      | 2.39                    | 2.47                     | 125        | ----                 | ----                              | 4/20/55     | 27.7                      | 29.3                    | 27.5                     | 2.05                      | 2.17                    | 157        | ----                 | ----                              |                          |                           |  |  |
| 5/17/55  | 23.7                    | 25.0                     | 22.6                      | 1.68                    | 2.08                     | 260        | NT                   | ----                              | 5/17/55     | 25.3                      | 26.5                    | 25.4                     | 1.47                      | 1.96                    | 254        | NT                   | ----                              |                          |                           |  |  |



Northeastern Region (Continued)

| Sample<br>Date  | Soil Moisture Content   |                          |                           |                           |                           | Cone<br>Index | Remold-<br>ing<br>Index | Depth to<br>Water<br>Table<br>in. | Sample<br>Date | Soil Moisture Content   |                          |                           |                           |                           | Cone<br>Index | Remold-<br>ing<br>Index | Depth to<br>Water<br>Table<br>in. |
|---|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|---------------|-------------------------|-----------------------------------|----------------|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|---------------|-------------------------|-----------------------------------|
|   | Percent weight Basis    |                          |                           |                           |                           |               |                         |                                   |                | in./6 in.               |                          |                           |                           |                           |               |                         |                                   |
|   | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 18- to<br>24-in.<br>Depth | 24- to<br>30-in.<br>Depth |               |                         |                                   |                | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 18- to<br>24-in.<br>Depth | 24- to<br>30-in.<br>Depth |               |                         |                                   |
| Site 43, Crawford Co., Pa.<br>Frenchtown Sil/Sil (M)    |                         |                          |                           |                           |                           |               |                         |                                   |                |                         |                          |                           |                           |                           |               |                         |                                   |
| 7/9/54  | 31.0                    | 25.3                     | 17.9                      | 1.89                      | 1.88                      | 257           | ----                    |                                   | 7/10/54        | 12.3                    | 21.7                     | 21.5                      | 0.93                      | 1.78                      | 292           | ----                    |                                   |
| 8/4/54  | 26.1                    | 20.4                     | 14.3                      | 1.61                      | 1.52                      | 300           | ----                    |                                   | 8/4/54         | 22.0                    | 17.4                     | 15.3                      | 1.43                      | 1.42                      | 300           | ----                    |                                   |
| 8/19/54   | 30.3                    | 21.2                     | 19.4                      | 1.85                      | 1.55                      | 300           | ----                    |                                   | 8/19/54        | 21.4                    | 15.3                     | 10.1                      | 1.33                      | 1.25                      | 300           | ----                    |                                   |
| 9/14/54   | 27.0                    | 22.1                     | 19.3                      | 1.65                      | 1.61                      | 300           | ----                    |                                   | 9/15/54        | 18.7                    | 12.5                     | 11.0                      | 1.22                      | 1.02                      | 300           | ----                    |                                   |
| 11/11/54  | 53.3                    | 43.9                     | 34.4                      | 3.25                      | 3.20                      | 131           | 0.72                    |                                   | 10/19/54       | 32.3                    | 22.0                     | 21.3                      | 2.13                      | 1.97                      | 197           | 0.66                    |                                   |
| 3/15/55   | 49.5                    | 42.3                     | 33.8                      | 3.02                      | 2.12                      | 165           | ----                    |                                   | 3/15/55        | 43.7                    | 31.0                     | 27.4                      | 2.34                      | 2.54                      | 158           | 0.62                    |                                   |
| 4/20/55   | 45.5                    | 39.3                     | 31.1                      | 2.76                      | 2.87                      | 125           | ----                    |                                   | 4/20/55        | 41.7                    | 27.6                     | 24.3                      | 2.72                      | 2.26                      | 142           | ----                    |                                   |
| 5/17/55   | 37.3                    | 32.6                     | 28.4                      | 2.27                      | 2.38                      | 203           | 0.80                    |                                   | 5/17/55        | 31.5                    | 24.3                     | 23.1                      | 2.05                      | 1.99                      | 223           | ----                    |                                   |
| Site 45, Cattaraugus Co., N. Y.<br>Unadilla Sil/Sil (M) |                         |                          |                           |                           |                           |               |                         |                                   |                |                         |                          |                           |                           |                           |               |                         |                                   |
| 7/10/54   | 20.0                    | 13.5                     | 15.3                      | 1.23                      | 1.54                      | 300           | ----                    |                                   | 7/10/54        | 97.0                    | 65.7                     | 51.2                      | 3.88                      | 3.81                      | 90            | ----                    |                                   |
| 8/4/54  | 27.4                    | 16.5                     | 14.3                      | 1.75                      | 1.37                      | 300           | ----                    |                                   | 8/4/54         | 69.4                    | 52.8                     | 26.6                      | 2.78                      | 3.06                      | 135           | ----                    |                                   |
| 8/19/54   | 13.7                    | 14.2                     | 14.3                      | 0.38                      | 1.13                      | 300           | ----                    |                                   | 8/19/54        | 77.8                    | 60.0                     | 36.4                      | 3.11                      | 3.48                      | 149           | ----                    |                                   |
| 9/15/54   | 18.0                    | 15.7                     | 14.1                      | 1.15                      | 1.30                      | 300           | ----                    |                                   | 9/15/54        | 56.1                    | 48.9                     | 38.5                      | 2.24                      | 2.84                      | 157           | ----                    |                                   |
| 10/19/54  | 29.3                    | 25.5                     | 22.7                      | 1.91                      | 2.12                      | 202           | 0.74                    |                                   | 10/19/54       | 121.1                   | 109.8                    | 89.5                      | 4.84                      | 6.37                      | 55            | 0.36                    |                                   |
| 3/16/55   | 40.7                    | 34.0                     | 31.5                      | 2.60                      | 2.32                      | 172           | 0.58                    |                                   | 3/16/55        | Flooded                 |                          |                           |                           |                           |               |                         |                                   |
| 4/20/55   | 33.5                    | 30.5                     | 26.9                      | 2.15                      | 2.54                      | 127           | ----                    |                                   | 4/20/55        | Flooded                 |                          |                           |                           |                           |               |                         |                                   |
| 5/17/55   | 31.9                    | 26.0                     | 22.6                      | 2.04                      | 2.16                      | 250           | ----                    |                                   | 5/17/55        | Flooded                 |                          |                           |                           |                           |               |                         |                                   |
| Bulk density and moisture content values questionable   |                         |                          |                           |                           |                           |               |                         |                                   |                |                         |                          |                           |                           |                           |               |                         |                                   |
| Site 47, Cattaraugus Co., N. Y.<br>Chenango Sil/Sil (M) |                         |                          |                           |                           |                           |               |                         |                                   |                |                         |                          |                           |                           |                           |               |                         |                                   |
| 7/10/54   | 24.3                    | 24.6                     | 24.6                      | 1.31                      | 1.75                      | 233           | ----                    |                                   | 7/10/54        | 30.3                    | 24.0                     | 21.1                      | 2.00                      | 2.02                      | 261           | ----                    |                                   |
| 8/4/54  | 22.6                    | 15.6                     | 14.5                      | 1.22                      | 1.11                      | 300           | ----                    |                                   | 8/4/54         | 26.4                    | 20.3                     | 16.7                      | 1.74                      | 1.71                      | 300           | ----                    |                                   |
| 8/19/54   | 19.6                    | 15.8                     | 15.3                      | 1.06                      | 1.12                      | 300           | ----                    |                                   | 8/19/54        | 25.9                    | 22.1                     | 19.4                      | 1.71                      | 1.86                      | 300           | ----                    |                                   |
| 9/15/54   | 17.9                    | 14.6                     | 14.3                      | 0.96                      | 1.04                      | 300           | ----                    |                                   | 9/15/54        | 27.8                    | 20.6                     | 17.4                      | 1.83                      | 1.73                      | 300           | ----                    |                                   |
| 10/19/54  | 36.6                    | 34.1                     | 30.8                      | 1.98                      | 2.42                      | 176           | NT +                    |                                   | 10/19/54       | 42.0                    | 27.5                     | 26.3                      | 2.77                      | 2.31                      | 167           | 0.68                    |                                   |
| 3/16/55   | 41.7                    | 34.4                     | 35.0                      | 2.25                      | 2.73                      | 180           | 0.70 +                  |                                   | 3/16/55        | 41.9                    | 33.3                     | 26.8                      | 2.77                      | 2.80                      | 167           | 0.73                    |                                   |
| 4/20/55   | 38.5                    | 29.7                     | 27.9                      | 2.08                      | 2.11                      | 171           | 0.70 +                  |                                   | 4/20/55        | 37.6                    | 25.3                     | 23.9                      | 2.48                      | 2.13                      | 144           | ----                    |                                   |
| 5/17/55   | 26.0                    | 25.5                     | 26.0                      | 1.40                      | 1.81                      | 221           | ----                    |                                   | 5/17/55        | 26.4                    | 24.0                     | 22.2                      | 1.74                      | 2.02                      | 300           | ----                    |                                   |
| Site 49, Niagara Co., N. Y.<br>Taketown Sil/Sil (S)     |                         |                          |                           |                           |                           |               |                         |                                   |                |                         |                          |                           |                           |                           |               |                         |                                   |
| 7/10/54   | 19.1                    | 19.3                     | 21.5                      | 1.32                      | 1.66                      | 300           | ----                    |                                   | 7/10/54        | 14.6                    | 15.4                     | 16.1                      | 1.17                      | 1.32                      | 300           | ----                    |                                   |
| 8/5/54  | 28.0                    | 20.4                     | 20.9                      | 1.92                      | 1.75                      | 300           | ----                    |                                   | 8/5/54         | 18.4                    | 17.6                     | 15.2                      | 1.47                      | 1.51                      | 300           | ----                    |                                   |
| 8/19/54   | 24.7                    | 22.2                     | 22.8                      | 1.55                      | 1.91                      | 296           | ----                    |                                   | 8/19/54        | 18.0                    | 19.2                     | 16.3                      | 1.44                      | 1.65                      | 300           | ----                    |                                   |
| 9/15/54   | 42.4                    | 27.3                     | 27.9                      | 2.84                      | 2.35                      | 209           | ----                    |                                   | 9/15/54        | 26.0                    | 22.5                     | 20.3                      | 2.08                      | 1.93                      | 229           | ----                    |                                   |
| 10/20/54  | 42.4                    | 35.3                     | 27.4                      | 2.97                      | 2.08                      | 122           | 0.84                    |                                   | 10/20/54       | 42.3                    | 42.0                     | 32.3                      | 3.38                      | 3.44                      | 109           | 0.82                    |                                   |
| 3/16/55   | 47.9                    | 47.5                     | 34.9                      | 3.20                      | 3.74                      | 148           | 0.66                    |                                   | 3/16/55        | 45.0                    | 41.4                     | 34.6                      | 3.60                      | 3.56                      | 123           | ----                    |                                   |
| 4/21/55   | 31.1                    | 35.4                     | 25.2                      | 3.22                      | 3.13                      | 109           | ----                    |                                   | 4/21/55        | Flooded                 |                          |                           |                           |                           |               |                         |                                   |
| 5/18/55   | 26.1                    | 26.4                     | 27.7                      | 1.75                      | 2.27                      | 242           | NT                      | DRY                               | 5/18/55        | 18.5                    | 22.5                     | 21.5                      | 1.46                      | 1.94                      | 204           | 0.70                    | DRY                               |
| Site 52, Niagara Co., N. Y.<br>Tonawanda Sil/Sil (S)    |                         |                          |                           |                           |                           |               |                         |                                   |                |                         |                          |                           |                           |                           |               |                         |                                   |
| 7/11/54   | 14.1                    | 17.3                     | 15.5                      | 1.03                      | 1.54                      | 300           | ----                    |                                   | 7/11/54        | 12.1                    | 11.6                     | 11.6                      | 0.98                      | 1.03                      | 300           | ----                    |                                   |
| 8/5/54  | 14.4                    | 13.5                     | 17.0                      | 1.05                      | 1.47                      | 300           | ----                    |                                   | 8/5/54         | 22.8                    | 10.4                     | 9.0                       | 1.85                      | 0.93                      | 300           | ----                    |                                   |
| 8/19/54   | 15.7                    | 17.6                     | 16.0                      | 1.15                      | 1.57                      | 300           | ----                    |                                   | 8/19/54        | 16.5                    | 12.2                     | 10.9                      | 1.34                      | 1.09                      | 300           | ----                    |                                   |
| 9/15/54   | 40.7                    | 24.7                     | 20.4                      | 1.24                      | 2.00                      | 251           | ----                    |                                   | 9/15/54        | 25.0                    | 22.0                     | 15.9                      | 2.02                      | 1.98                      | 202           | ----                    |                                   |
| 10/20/54  | 39.9                    | 30.0                     | 26.2                      | 2.91                      | 2.67                      | 174           | 0.62 +                  |                                   | 10/20/54       | 29.1                    | 25.6                     | 20.9                      | 2.36                      | 2.28                      | 129           | 0.50                    |                                   |
| 3/16/55   | 36.5                    | 30.3                     | 25.1                      | 2.66                      | 2.74                      | 132           | 0                       |                                   | 3/16/55        | 39.6                    | 30.5                     | 29.1                      | 3.21                      | 2.71                      | 180           |                         | 3                                 |
| 4/21/55   | 33.0                    | 30.3                     | 21.6                      | 2.77                      | 2.73                      | 104           | 0.76                    |                                   | 4/21/55        | 33.0                    | 28.8                     | 18.9                      | 2.97                      | 2.56                      | 94            | 0.41                    | 5                                 |
| 5/18/55   | 21.7                    | 23.2                     | 25.3                      | 1.58                      | 2.06                      | 300           | ----                    | DRY                               | 5/18/55        | 24.4                    | 21.4                     | 20.3                      | 1.98                      | 1.90                      | 219           | ----                    |                                   |
| Site 54, Niagara Co., N. Y.<br>Junius L/L (M)           |                         |                          |                           |                           |                           |               |                         |                                   |                |                         |                          |                           |                           |                           |               |                         |                                   |
| 7/11/54   | 14.2                    | 11.3                     | 7.7                       | 1.06                      | 1.01                      | 300           | ----                    |                                   | 7/11/54        | 9.9                     | 10.4                     | 10.5                      | 0.81                      | 0.93                      | 300           | ----                    |                                   |
| 8/5/54  | 27.4                    | 13.5                     | 10.5                      | 2.06                      | 1.57                      | 171           | ----                    |                                   | 8/5/54         | 18.5                    | 11.9                     | 12.0                      | 1.52                      | 1.06                      | 300           | ----                    |                                   |
| 8/19/54   | 20.0                    | 12.9                     | 9.8                       | 1.50                      | 1.11                      | 300           | ----                    |                                   | 8/19/54        | 13.1                    | 10.3                     | 11.3                      | 1.07                      | 0.96                      | 300           | ----                    |                                   |
| 9/15/54   | 30.3                    | 21.5                     | 15.2                      | 2.27                      | 1.85                      | 165           | ----                    |                                   | 9/15/54        | 23.3                    | 15.1                     | 15.7                      | 1.91                      | 1.34                      | 775           | ----                    |                                   |
| 10/20/54  | 35.7                    | 31.0                     | 26.8                      | 2.68                      | 2.67                      | 92            | 0.39                    |                                   | 10/20/54       | 27.0                    | 21.4                     | 20.7                      | 2.21                      | 1.90                      | 181           | 0.68                    |                                   |
| 3/16/55   | 47.7                    | 32.3                     | 29.4                      | 3.58                      | 2.78                      | 109           | ----                    | 3                                 | 3/16/55        | 40.5                    | 34.4                     | 28.1                      | 3.32                      | 3.06                      | 139           | 0.59                    | 0                                 |
| 4/21/55   | 39.5                    | 27.1                     | 24.3                      | 2.36                      | 2.33                      | 60            | 0.45                    |                                   | 4/21/55        | 35.3                    | 33.8                     | 26.3                      | 2.99                      | 3.01                      | 83            | ----                    |                                   |
| 5/18/55   | 29.7                    | 21.3                     | 17.6                      | 2.30                      | 1.93                      | 183           | ----                    | DRY                               | 5/18/55        | 21.3                    | 20.9                     | 20.7                      | 1.75                      | 1.85                      | 219           | 1.00                    | DRY                               |
| Site 56, Niagara Co., N. Y.<br>Collamer Sil/Sil (L)     |                         |                          |                           |                           |                           |               |                         |                                   |                |                         |                          |                           |                           |                           |               |                         |                                   |
| 7/11/54   | 8.3                     | 10.2                     | 8.9                       | 0.66                      | 0.86                      | 300           | ----                    |                                   | 7/11/54        | 8.7                     | 7.9                      | 3.9                       | 0.67                      | 0.69                      | 300           | ----                    |                                   |
| 8/5/54  | 11.6                    | 11.0                     | 11.0                      | 0.93                      | 0.92                      | 300           | ----                    |                                   | 8/5/54         | 13.1                    | 7.6                      | 5.8                       | 2.01                      | 0.66                      | 300           | ----                    |                                   |
| 8/19/54   | 8.1                     | 8.2                      | 9.9                       | 0.65                      | 0.69                      | 300           | ----                    |                                   | 8/19/54        | 9.5                     | 5.3                      | 5.0                       | 0.73                      | 0.46                      | 300           | ----                    |                                   |
| 9/15/54   | 24.1                    | 17.7                     | 9.6                       | 1.93                      | 1.49                      | 300           | ----                    |                                   | 9/15/54        | 23.1                    | 11.3                     | 7.2                       | 1.70                      | 0.98                      | 300           | ----                    |                                   |
| 10/20/54  | 26.5                    | 24.5                     | 20.3                      | 2.12                      | 2.06                      | 167           | NT                      |                                   | 10/20/54       | 26.4                    | 22.4                     | 21.9                      | 2.03                      | 1.95                      | 162           | NT                      |                                   |
| 4/21/55   | 30.5                    | 25.0                     | 19.4                      | 2.44                      | 2.10                      | 123           | 0.59                    |                                   | 4/21/55        | 35.5                    | 30.9                     | 27.6                      | 2.58                      | 2.69                      | 120           | 0.26                    |                                   |
| 4/20/55   | 28.7                    | 25.6                     | 22.2                      | 2.30                      | 2.15                      | --            | ----                    |                                   | 4/20/55        | 32.5                    | 31.2                     | 29.3                      | 2.50                      | 2.71                      | --            | ----                    |                                   |
| 5/18/55   | 22.9                    | 19.1                     | 19.7                      | 1.82                      | 1.60                      | 300           | NT                      |                                   | 5/18/55        | 23.5                    | 20.0                     | 16.5                      | 1.81                      | 1.74                      | 300           | NT                      |                                   |
| Site 57, Niagara Co., N. Y.<br>Junius L/L (M)           |                         |                          |                           |                           |                           |               |                         |                                   |                |                         |                          |                           |                           |                           |               |                         |                                   |
| 7/11/54   | 8.3                     | 10.2                     | 8.9                       | 0.66                      | 0.86                      | 300           | ----                    |                                   | 7/11/54        | 8.7                     | 7.9                      | 3.9                       | 0.67                      | 0.69                      | 300           | ----                    |                                   |
| 8/5/54  | 11.6                    | 11.0                     | 11.0                      | 0.93                      | 0.92                      | 300           | ----                    |                                   | 8/5/54         | 13.1                    | 7.6                      | 5.8                       | 2.01                      | 0.66                      | 300           | ----                    |                                   |
| 8/19/54   | 8.1                     | 8.2                      | 9.9                       | 0.65                      | 0.69                      | 300           | ----                    |                                   | 8/19/54        | 9.5                     | 5.3                      | 5.0                       | 0.73                      | 0.46                      | 300           | ----                    |                                   |
| 9/15/54   | 24.1                    | 17.7                     | 9.6                       | 1.93                      | 1.49                      | 300           | ----                    |                                   | 9/15/54        | 23.1                    | 11.3                     | 7.2                       | 1.70                      | 0.98                      | 300           | ----                    |                                   |
| 10/20/54  | 26.5                    | 24.5                     | 20.3                      | 2.12                      | 2.06                      | 167           | NT                      |                                   | 10/20/54       | 26.4                    | 22.4                     | 21.9                      | 2.03                      | 1.95                      | 162           | NT                      |                                   |
| 4/21/55   | 30.5                    | 25.0                     | 19.4                      | 2.44                      | 2.10                      | 123           | 0.59                    |                                   | 4/21/55        | 35.5                    | 30.9                     | 27.6                      | 2.58                      | 2.69                      | 120           | 0.26                    |                                   |
| 4/20/55   | 28.7                    | 25.6                     | 22.2                      | 2.30                      | 2.15                      | --            | ----                    |                                   | 4/20/55        | 32.5                    | 31.2                     | 29.3                      | 2.50                      | 2.71                      | --            | ----                    |                                   |
| 5/18/55   | 22.9                    | 19.1                     | 19.7                      | 1.82                      | 1.60                      | 300           | NT                      |                                   | 5/18/55        | 23.5                    | 20.0                     | 16.5                      | 1.81                      | 1.74                      | 300           | NT                      |                                   |

(Continued)

Note: NT = no test.  
+ Measurement of 0- to 6-in. layer.



Table B3t (Continued)  
Northeastern Region (Continued)

| Soil Moisture Content                  |         |       |       |       |       |       |       |          |         | Remold-                                |       | Depth to                               |       |       |       |             |         |       |       |
|--|---------|-------|-------|-------|-------|-------|-------|----------|---------|--|-------|--|-------|-------|-------|-------------|---------|-------|-------|
| Percent Weight Basis                   |         |       |       |       |       |       |       |          |         | ing Index                              |       | Water                                  |       |       |       |             |         |       |       |
| In./in.                                |         |       |       |       |       |       |       |          |         | Index                                  |       | Table                                  |       |       |       |             |         |       |       |
| 0- to 4-in. 4- to 12-in. 12- to 18-in. |         |       |       |       |       |       |       |          |         | 0- to 4-in. 4- to 12-in. 12- to 18-in. |       | 0- to 4-in. 4- to 12-in. 12- to 18-in. |       |       |       |             |         |       |       |
| Sample Date                            | Depth   | Depth | Depth | Depth | Depth | Depth | Depth | Depth    | Depth   | Sample Date                            | Depth | Depth                                  | Depth | Depth | Depth | Sample Date | Depth   | Depth | Depth |
| Site 51, Warren Co., N. Y.             |         |       |       |       |       |       |       |          |         | Site 52, Warren Co., N. Y.             |       | Site 53, Warren Co., N. Y.             |       |       |       |             |         |       |       |
| Silt/CL (CL)                           |         |       |       |       |       |       |       |          |         | Silt/CL (CL)                           |       | Silt/CL (CL)                           |       |       |       |             |         |       |       |
| 7/12/54                                | 9.0     | 9.3   | 9.3   | 0.53  | 0.59  | 300   | ----  | 7/11/54  | 12.2    | 10.4                                   | 8.7   | 0.73                                   | 0.73  | 300   | ----  | 7/11/54     | 12.2    | 10.4  | 8.7   |
| 3/5/54                                 | 11.5    | 1.1   | 11.7  | 0.54  | 0.74  | 300   | ----  | 3/5/54   | 37.5    | 32.4                                   | 12.7  | 2.40                                   | 1.57  | 206   | ----  | 3/5/54      | 37.5    | 32.4  | 12.7  |
| 3/19/54                                | 3.1     | 7.9   | 3.3   | 0.59  | 0.72  | 300   | ----  | 8/19/54  | 27.6    | 23.0                                   | 14.3  | 1.77                                   | 1.61  | 232   | ----  | 3/19/54     | 33.3    | 22.3  | 20.0  |
| 9/15/54                                | 19.2    | 1.4   | 17.7  | 1.40  | 1.49  | 300   | ----  | 9/15/54  | 35.8    | 29.5                                   | 13.4  | 2.36                                   | 2.03  | 171   | ----  | 3/15/54     | 41.9    | 29.1  | 19.0  |
| 10/20/54                               | 75.2    | 19.1  | 19.4  | 1.35  | 1.74  | 300   | ----  | 10/21/54 | 40.2    | 33.0                                   | 23.7  | 2.57                                   | 2.31  | 149   | 0.72  | 10/21/54    | 54.2    | 34.0  | 20.2  |
| 3/15/55                                | 30.1    | 26.5  | 34.2  | 2.25  | 2.42  | 241   | ----  | 3/15/55  | 50.9    | 35.3                                   | 25.1  | 3.26                                   | 2.54  | 143   | ----  | 3/15/55     | 51.5    | 43.7  | 3.0   |
| 4/21/55                                | 30.2    | 24.5  | 31.9  | 2.20  | 2.32  | 274   | ----  | 4/21/55  | 45.2    | 30.6                                   | 24.9  | 2.89                                   | 2.14  | 93    | ----  | 4/21/55     | Flooded |       |       |
| 5/10/55                                | 21.3    | 21.3  | 24.3  | 1.59  | 1.95  | 300   | NT    | 5/10/55  | 35.4    | 25.3                                   | 20.7  | 2.33                                   | 1.35  | 192   | 0.90  | 5/10/55     | Flooded |       |       |
| Site 54, Warren Co., N. Y.             |         |       |       |       |       |       |       |          |         | Site 55, Union Co., Pa.                |       | Site 56, Union Co., Pa.                |       |       |       |             |         |       |       |
| Silt/CL (CL)                           |         |       |       |       |       |       |       |          |         | Silt/CL (CL)                           |       | Silt/CL (CL)                           |       |       |       |             |         |       |       |
| 7/12/54                                | 13.3    | 23.7  | 12.3  | 1.24  | 1.54  | 395   | ----  | 7/12/54  | 22.2    | 17.5                                   | 7.9   | 1.31                                   | 1.43  | 300   | ----  | 7/12/54     | 21.6    | 15.0  | 17.2  |
| 3/5/54                                 | 37.5    | 21.1  | 13.4  | 1.55  | 1.54  | 159   | ----  | 3/5/54   | 41.6    | 30.1                                   | 23.5  | 2.45                                   | 2.47  | 277   | ----  | 3/5/54      | 34.0    | 29.4  | 13.9  |
| 3/19/54                                | 33.3    | 22.3  | 20.0  | 1.25  | 1.10  | 251   | ----  | 3/19/54  | 34.3    | 27.7                                   | 24.6  | 2.02                                   | 1.27  | 273   | ----  | 3/20/54     | 33.5    | 13.5  | 12.0  |
| 3/15/54                                | 41.9    | 29.1  | 19.0  | 2.45  | 1.92  | 175   | ----  | 9/15/54  | 35.0    | 26.9                                   | 11.3  | 2.12                                   | 0.21  | 220   | ----  | 3/20/54     | 32.4    | 15.1  | 12.3  |
| 10/21/54                               | 54.2    | 34.0  | 20.2  | 3.73  | 2.51  | 141   | 0.54† | 10/21/54 | 53.5    | 41.3                                   | 25.5  | 3.35                                   | 3.43  | 137   | 0.58  | 11/11/54    | 32.1    | 20.0  | 20.5  |
| 3/15/55                                | 51.5    | 43.7  | 3.0   | 3.50  | 3.17  | 174   | ----  | 3/15/55  | 54.5    | 38.4                                   | 30.1  | 3.22                                   | 3.97  | 122   | ----  | 4/4/55      | 31.0    | 25.4  | 22.0  |
| 4/21/55                                | Flooded |       |       |       |       |       |       | 4/21/55  | Flooded |  |       |  |       |       |       | 4/21/55     | 32.3    | 23.5  | 25.1  |
| 5/13/55                                | 40.5    | 32.9  | 20.4  | 2.75  | 2.14  | 207   | 0.75  | 5/13/55  | 57.0    | 30.2                                   | 19.2  | 3.35                                   | 2.43  | 154   | 0.73  | 4/22/55     | 25.7    | 17.2  | 14.1  |
| Site 57, Centre Co., Pa.               |         |       |       |       |       |       |       |          |         | Site 58, Centre Co., Pa.               |       | Site 59, Centre Co., Pa.               |       |       |       |             |         |       |       |
| Silt/CL (CL)                           |         |       |       |       |       |       |       |          |         | Silt/CL (CL)                           |       | Silt/CL (CL)                           |       |       |       |             |         |       |       |
| 7/12/54                                | 13.7    | 13.6  | 17.2  | 1.00  | 1.03  | 300   | ----  | 7/12/54  | 14.1    | 12.0                                   | 13.2  | 1.07                                   | 1.00  | 300   | ----  | 7/12/54     | 12.5    | 2.9   | 0.2   |
| 3/2/54                                 | 19.2    | 11.2  | 11.3  | 1.40  | 0.35  | 233   | ----  | 3/2/54   | 25.2    | 13.3                                   | 14.5  | 1.92                                   | 1.52  | 266   | ----  | 3/2/54      | 11.3    | 2.6   | 0.2   |
| 9/20/54                                | 10.2    | 9.5   | 9.7   | 0.74  | 0.73  | 300   | ----  | 3/20/54  | 19.0    | 15.9                                   | 16.9  | 1.44                                   | 1.32  | 300   | ----  | 3/17/54     | 12.2    | 7.3   | 0.0   |
| 9/1/54                                 | 21.0    | 11.9  | 9.5   | 1.58  | 0.90  | 300   | ----  | 3/16/54  | 21.6    | 13.5                                   | 10.7  | 1.64                                   | 1.12  | 300   | ----  | 9/13/54     | 13.5    | 13.1  | 11.3  |
| 11/11/54                               | 21.8    | 18.5  | 11.3  | 1.59  | 1.41  | 246   | NT    | 11/11/54 | 32.4    | 19.6                                   | 21.4  | 2.46                                   | 1.63  | 236   | NT    | 12/1/54     | 35.8    | 17.3  | 14.1  |
| 4/4/55                                 | 31.0    | 25.4  | 22.0  | 2.25  | 1.93  | 167   | 1.05* | 4/4/55   | 27.9    | 22.1                                   | 13.9  | 2.12                                   | 1.63  | 216   | 0.92† | 3/14/55     | 40.2    | 22.4  | 21.0  |
| 4/22/55                                | 25.7    | 17.2  | 14.1  | 1.88  | 1.31  | 109   | 1.04* | 4/22/55  | 30.5    | 21.5                                   | 17.0  | 2.32                                   | 1.78  | 143   | 0.82† | 4/13/55     | 43.3    | 35.6  | 28.3  |
| Site 60, Tioga Co., Pa.                |         |       |       |       |       |       |       |          |         | Site 61, Tioga Co., Pa.                |       | Site 62, Tioga Co., Pa.                |       |       |       |             |         |       |       |
| Silt/CL (CL)                           |         |       |       |       |       |       |       |          |         | Silt/CL (CL)                           |       | Silt/CL (CL)                           |       |       |       |             |         |       |       |
| 7/12/54                                | 13.7    | 13.6  | 17.2  | 1.00  | 1.03  | 300   | ----  | 7/12/54  | 14.1    | 12.0                                   | 13.2  | 1.07                                   | 1.00  | 300   | ----  | 7/12/54     | 12.5    | 2.9   | 0.2   |
| 3/2/54                                 | 19.2    | 11.2  | 11.3  | 1.40  | 0.35  | 233   | ----  | 3/2/54   | 25.2    | 13.3                                   | 14.5  | 1.92                                   | 1.52  | 266   | ----  | 3/2/54      | 11.3    | 2.6   | 0.2   |
| 9/20/54                                | 10.2    | 9.5   | 9.7   | 0.74  | 0.73  | 300   | ----  | 3/20/54  | 19.0    | 15.9                                   | 16.9  | 1.44                                   | 1.32  | 300   | ----  | 3/17/54     | 12.2    | 7.3   | 0.0   |
| 9/1/54                                 | 21.0    | 11.9  | 9.5   | 1.58  | 0.90  | 300   | ----  | 3/16/54  | 21.6    | 13.5                                   | 10.7  | 1.64                                   | 1.12  | 300   | ----  | 9/13/54     | 13.5    | 13.1  | 11.3  |
| 11/11/54                               | 21.8    | 18.5  | 11.3  | 1.59  | 1.41  | 246   | NT    | 11/11/54 | 32.4    | 19.6                                   | 21.4  | 2.46                                   | 1.63  | 236   | NT    | 12/1/54     | 35.8    | 17.3  | 14.1  |
| 4/4/55                                 | 31.0    | 25.4  | 22.0  | 2.25  | 1.93  | 167   | 1.05* | 4/4/55   | 27.9    | 22.1                                   | 13.9  | 2.12                                   | 1.63  | 216   | 0.92† | 3/14/55     | 40.2    | 22.4  | 21.0  |
| 4/22/55                                | 25.7    | 17.2  | 14.1  | 1.88  | 1.31  | 109   | 1.04* | 4/22/55  | 30.5    | 21.5                                   | 17.0  | 2.32                                   | 1.78  | 143   | 0.82† | 4/13/55     | 43.3    | 35.6  | 28.3  |
| Site 63, Union Co., Pa.                |         |       |       |       |       |       |       |          |         | Site 64, Union Co., Pa.                |       | Site 65, Union Co., Pa.                |       |       |       |             |         |       |       |
| Huntington L/SI (CL)                   |         |       |       |       |       |       |       |          |         | Huntington L/SI (CL)                   |       | Huntington L/SI (CL)                   |       |       |       |             |         |       |       |
| 7/12/54                                | 12.5    | 2.9   | 0.2   | 0.72  | 0.72  | 129   | ----  | 7/12/54  | 25.3    | 25.5                                   | 15.8  | 1.47                                   | 1.73  | 141   | ----  | 7/12/54     | 12.5    | 2.9   | 0.2   |
| 3/2/54                                 | 11.3    | 2.6   | 0.2   | 0.59  | 0.53  | 300   | ----  | 3/2/54   | 13.3    | 19.5                                   | 13.6  | 0.77                                   | 1.33  | 159   | ----  | 3/2/54      | 11.3    | 2.6   | 0.2   |
| 3/17/54                                | 12.2    | 7.3   | 0.0   | 0.71  | 0.53  | 254   | ----  | 3/17/54  | 15.3    | 15.4                                   | 12.6  | 0.95                                   | 1.05  | 174   | ----  | 3/17/54     | 12.2    | 7.3   | 0.0   |
| 9/13/54                                | 13.5    | 13.1  | 11.3  | 1.07  | 0.95  | 172   | NT    | 9/13/54  | 38.5    | 26.1                                   | 18.1  | 1.66                                   | 1.77  | 106   | 1.20  | 9/13/54     | 13.5    | 13.1  | 11.3  |
| 12/1/54                                | 35.8    | 17.3  | 14.1  | 1.02  | 1.25  | 203   | ----  | 12/1/54  | 40.2    | 40.6                                   | 24.0  | 2.33                                   | 2.76  | 96    | ----  | 12/1/54     | 35.8    | 17.3  | 14.1  |
| 3/14/55                                | 40.2    | 22.4  | 21.0  | 2.33  | 1.54  | 139   | ----  | 3/14/55  | 43.3    | 35.6                                   | 28.3  | 2.54                                   | 2.42  | 118   | ----  | 3/14/55     | 40.2    | 22.4  | 21.0  |
| 4/13/55                                | 29.2    | 20.1  | 13.2  | 1.19  | 1.47  | 179   | 1.32* | 4/13/55  | 41.1    | 40.6                                   | 27.7  | 2.38                                   | 2.76  | 61    | 0.71  | 4/13/55     | 43.3    | 35.6  | 28.3  |
| 5/15/55                                | 20.2    | 15.1  | 14.5  | 1.17  | 1.10  | 143   | NT    | 5/15/55  | 20.3    | 21.4                                   | 21.5  | 1.21                                   | 1.46  | 159   | 1.11* | 5/15/55     | 20.2    | 15.1  | 14.5  |
| Site 66, Union Co., Pa.                |         |       |       |       |       |       |       |          |         | Site 67, Union Co., Pa.                |       | Site 68, Union Co., Pa.                |       |       |       |             |         |       |       |
| Huntington L/SI (CL)                   |         |       |       |       |       |       |       |          |         | Huntington L/SI (CL)                   |       | Huntington L/SI (CL)                   |       |       |       |             |         |       |       |
| 7/12/54                                | 12.5    | 2.9   | 0.2   | 0.72  | 0.72  | 129   | ----  | 7/12/54  | 25.3    | 25.5                                   | 15.8  | 1.47                                   | 1.73  | 141   | ----  | 7/12/54     | 12.5    | 2.9   | 0.2   |
| 3/2/54                                 | 11.3    | 2.6   | 0.2   | 0.59  | 0.53  | 300   | ----  | 3/2/54   | 13.3    | 19.5                                   | 13.6  | 0.77                                   | 1.33  | 159   | ----  | 3/2/54      | 11.3    | 2.6   | 0.2   |
| 3/17/54                                | 12.2    | 7.3   | 0.0   | 0.71  | 0.53  | 254   | ----  | 3/17/54  | 15.3    | 15.4                                   | 12.6  | 0.95                                   | 1.05  | 174   | ----  | 3/17/54     | 12.2    | 7.3   | 0.0   |
| 9/13/54                                | 13.5    | 13.1  | 11.3  | 1.07  | 0.95  | 172   | NT    | 9/13/54  | 38.5    | 26.1                                   | 18.1  | 1.66                                   | 1.77  | 106   | 1.20  | 9/13/54     | 13.5    | 13.1  | 11.3  |
| 12/1/54                                | 35.8    | 17.3  | 14.1  | 1.02  | 1.25  | 203   | ----  | 12/1/54  | 40.2    | 40.6                                   | 24.0  | 2.33                                   | 2.76  | 96    | ----  | 12/1/54     | 35.8    | 17.3  | 14.1  |
| 3/14/55                                | 40.2    | 22.4  | 21.0  | 2.33  | 1.54  | 139   | ----  | 3/14/55  | 43.3    | 35.6                                   | 28.3  | 2.54                                   | 2.42  | 118   | ----  | 3/14/55     | 40.2    | 22.4  | 21.0  |
| 4/13/55                                | 29.2    | 20.1  | 13.2  | 1.19  | 1.47  | 179   | 1.32* | 4/13/55  | 41.1    | 40.6                                   | 27.7  | 2.38                                   | 2.76  | 61    | 0.71  | 4/13/55     | 43.3    | 35.6  | 28.3  |
| 5/15/55                                | 20.2    | 15.1  | 14.5  | 1.17  | 1.10  | 143   | NT    | 5/15/55  | 20.3    | 21.4                                   | 21.5  | 1.21                                   | 1.46  | 159   | 1.11* | 5/15/55     | 20.2    | 15.1  | 14.5  |
| Site 69, Centre Co., Pa.               |         |       |       |       |       |       |       |          |         | Site 70, Centre Co., Pa.               |       | Site 71, Centre Co., Pa.               |       |       |       |             |         |       |       |
| Huntington L/SI (CL)                   |         |       |       |       |       |       |       |          |         | Huntington L/SI (CL)                   |       | Huntington L/SI (CL)                   |       |       |       |             |         |       |       |
| 7/12/54                                | 12.5    | 2.9   | 0.2   | 0.72  | 0.72  | 129   | ----  | 7/12/54  | 25.3    | 25.5                                   | 15.8  | 1.47                                   | 1.73  | 141   | ----  | 7/12/54     | 12.5    | 2.9   | 0.2   |
| 3/2/54                                 | 11.3    | 2.6   | 0.2   | 0.59  | 0.53  | 300   | ----  | 3/2/54   | 13.3    | 19.5                                   | 13.6  | 0.77                                   | 1.33  | 159   | ----  | 3/2/54      | 11.3    | 2.6   | 0.2   |
| 3/17/54                                | 12.2    | 7.3   | 0.0   | 0.71  | 0.53  | 254   | ----  | 3/17/54  | 15.3    | 15.4                                   | 12.6  | 0.95                                   | 1.05  | 174   | ----  | 3/17/54     | 12.2    | 7.3   | 0.0   |
| 9/13/54                                | 13.5    | 13.1  | 11.3  | 1.07  | 0.95  | 172   | NT    | 9/13/54  | 38.5    | 26.1                                   | 18.1  | 1.66                                   | 1.77  | 106   | 1.20  | 9/13/54     | 13.5    | 13.1  | 11.3  |
| 12/1/54                                | 35.8    | 17.3  | 14.1  | 1.02  | 1.25  | 203   | ----  | 12/1/54  | 40.2    | 40.6                                   | 24.0  | 2.33                                   | 2.76  | 96    | ----  | 12/1/54     | 35.8    | 17.3  | 14.1  |
| 3/14/55                                | 40.2    | 22.4  | 21.0  | 2.33  | 1.54  | 139   | ----  | 3/14/55  | 43.3    | 35.6                                   | 28.3  | 2.54                                   | 2.42  | 118   | ----  | 3/14/55     | 40.2    | 22.4  | 21.0  |
| 4/13/55                                | 29.2    | 20.1  | 13.2  | 1.19  | 1.47  | 179   | 1.32* | 4/13/55  | 41.1    | 40.6                                   | 27.7  | 2.38                                   | 2.76  | 61    | 0.71  | 4/13/55     | 43.3    | 35.6  | 28.3  |
| 5/15/55                                | 20.2    | 15.1  | 14.5  | 1.17  | 1.10  | 143   | NT    | 5/15/55  | 20.3    | 21.4                                   | 21.5  | 1.21                                   | 1.46  | 159   | 1.11* | 5/15/55     | 20.2    | 15.1  | 14.5  |
| Site 72, Centre Co., Pa.               |         |       |       |       |       |       |       |          |         | Site 73, Centre Co., Pa.               |       | Site 74, Centre Co., Pa.               |       |       |       |             |         |       |       |
| Huntington L/SI (CL)                   |         |       |       |       |       |       |       |          |         | Huntington L/SI (CL)                   |       | Huntington L/SI (CL)                   |       |       |       |             |         |       |       |
| 7/12/54                                | 12.5    | 2.9   | 0.2   | 0.72  | 0.72  | 129   | ----  | 7/12/54  | 25.3    | 25.5                                   | 15.8  | 1.47                                   | 1.73  | 141   | ----  | 7/12/54     | 12.5    | 2.9   | 0.2   |
| 3/2/54                                 | 11.3    | 2.6   | 0.2   | 0.59  | 0.53  | 300   | ----  | 3/2/54   | 13.3    | 19.5                                   | 13.6  | 0.77                                   | 1.33  | 159   | ----  | 3/2/54      | 11.3    | 2.6   | 0.2   |
| 3/17/54                                | 12.2    | 7.3   | 0.0   | 0.71  | 0.53  | 254   | ----  | 3/17/54  | 15.3    | 15.4                                   | 12.6  | 0.95                                   | 1.05  | 174   | ----  | 3/17/54     | 12.2    | 7.3   | 0.0   |
| 9/13/54                                | 13.5    | 13.1  | 11.3  | 1.07  | 0.95  | 172   | NT    | 9/13/54  | 38.5    | 26.1                                   | 18.1  | 1.66                                   | 1.77  | 106   | 1.20  | 9/13/54     | 13.5    | 13.1  | 11.3  |
| 12/1/54                                | 35.8    | 17.3  | 14.1  | 1.02  | 1.25  | 203   | ----  | 12/1/54  | 40.2    | 40.6                                   | 24.0  | 2.33                                   | 2.76  | 96    | ----  | 12/1/54     | 35.8    | 17.3  | 14.1  |
| 3/14/55                                | 40.2    | 22.4  | 21.0  | 2.33  | 1.54  | 139   | ----  | 3/14/55  | 43.3    | 35.6                                   | 28.3  | 2.54                                   | 2.42  | 118   | ----  | 3/14/55     | 40.2    | 22.4  | 21.0  |
| 4/13/55                                | 29.2    | 20.1  | 13.2  | 1.19  | 1.47  | 179   | 1.32* | 4/13/55  | 41.1    | 40.6                                   | 27.7  | 2.38                                   | 2.76  | 61    | 0.71  | 4/13/55     | 43.3    | 35.6  | 28.3  |
| 5/15/55                                | 20.2    | 15.1  | 14.5  | 1.17  | 1.10  | 143   | NT    | 5        |         |  |       |  |       |       |       |             |         |       |       |

(Continued)

Note: NT = no test.

\* Vibrated remolding test.

† Measurement of 0- to 6-in. layer.



Table B:b (Continued)  
Northeastern Region (Continued)

| Soil Moisture Content                                 |                   |                    |                     |                   |                    |                     |                   |                    |                     | Core Index  | Depth to Water Table in. | Soil Moisture Content |                     |                   |                    |                     |                   |                    |                     |  |  | Core Index | Depth to Water Table in. |
|---|-------------------|--------------------|---------------------|-------------------|--------------------|---------------------|-------------------|--------------------|---------------------|-------------|--------------------------|-----------------------|---------------------|-------------------|--------------------|---------------------|-------------------|--------------------|---------------------|--|--|------------|--------------------------|
| Percent Weight Basis                                  |                   |                    |                     |                   |                    | in./in.             |                   |                    |                     |             |                          | Percent Weight Basis  |                     |                   |                    |                     |                   | in./in.            |                     |  |  |            |                          |
| Sample Date   | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth | Sample Date | 0- to 6-in. Depth        | 6- to 12-in. Depth    | 12- to 18-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth |  |  |            |                          |
| Site 73, Monroe Co., N. Y.                            |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Madison SL/SL (CL)                                    |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| 3/5/54  | 19.1              | 1.5                | 11.8                | 1.60              | 1.47               | 300                 | ----              | ----               | ----                | 8/5/54      | 19.1                     | 17.5                  | 17.5                | 1.59              | 1.64               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 9/20/54   | 11.1              | 7.9                | 9.1                 | 0.93              | 0.75               | 300                 | ----              | ----               | ----                | 9/20/54     | 13.3                     | 13.3                  | 13.1                | 1.10              | 1.30               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 9/1/54  | 20.2              | 12.3               | 13.0                | 1.70              | 1.17               | 300                 | ----              | ----               | ----                | 9/16/54     | 26.5                     | 24.4                  | 22.6                | 2.20              | 2.29               | 134                 | ----              | ----               | ----                |  |  |            |                          |
| 10/21/54  | 22.0              | 20.0               | 17.4                | 1.85              | 1.90               | 247                 | ----              | ----               | ----                | 10/21/54    | 33.9                     | 30.7                  | 28.1                | 2.31              | 2.39               | 143                 | ----              | ----               | ----                |  |  |            |                          |
| 11/5/54   | 24.0              | 20.1               | 19.0                | 2.02              | 1.91               | 201                 | 0.59†             | ----               | ----                | 11/5/54     | 34.2                     | 26.1                  | 23.5                | 2.34              | 2.45               | 151                 | 0.61              | ----               | ----                |  |  |            |                          |
| 4/4/55  | 25.0              | 25.2               | 22.6                | 2.23              | 2.39               | 157                 | 0.68†             | ----               | ----                | 4/4/55      | Flooded                  |                       |                     |                   |                    |                     | ----              | ----               | ----                |  |  |            |                          |
| 4/21/55   | 24.3              | 22.7               | 20.2                | 2.03              | 2.16               | 141                 | ----              | ----               | ----                | 4/21/55     | Flooded                  |                       |                     |                   |                    |                     | ----              | ----               | ----                |  |  |            |                          |
| 5/18/55   | 15.9              | 23.6               | 28.9                | 1.34              | 2.24               | 300                 | ----              | ----               | ----                | 5/18/55     | 24.0                     | 25.0                  | 24.3                | 1.99              | 2.41               | 201                 | 0.91              | ----               | ----                |  |  |            |                          |
| Site 75, Monroe Co., N. Y.                            |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Wilton SL/SL (CL)                                     |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| 2/5/54  | 20.0              | 14.3               | 13.3                | 1.52              | 1.36               | 300                 | ----              | ----               | ----                | 8/5/54      | 19.1                     | 11.4                  | 13.2                | 1.30              | 1.29               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 3/20/54   | 10.5              | 9.3                | 9.3                 | 0.81              | 0.90               | 300                 | ----              | ----               | ----                | 8/20/54     | 16.7                     | 13.2                  | 15.2                | 1.57              | 1.39               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 9/15/54   | 25.2              | 14.5               | 15.3                | 1.92              | 1.33               | 300                 | ----              | ----               | ----                | 9/15/54     | 25.2                     | 20.1                  | 19.1                | 2.37              | 2.09               | 293                 | ----              | ----               | ----                |  |  |            |                          |
| 10/21/54  | 29.3              | 20.9               | 20.3                | 2.26              | 1.92               | 263                 | ----              | ----               | ----                | 10/21/54    | 25.1                     | 20.4                  | 25.1                | 2.36              | 2.11               | 170                 | ----              | ----               | ----                |  |  |            |                          |
| 11/5/54   | 29.3              | 21.3               | 23.8                | 2.23              | 2.01               | 217                 | MT†               | ----               | ----                | 11/5/54     | 22.9                     | 19.2                  | 22.0                | 2.15              | 2.00               | 193                 | 0.58†             | ----               | ----                |  |  |            |                          |
| 4/4/55  | 33.7              | 25.2               | 21.5                | 2.56              | 2.32               | 172                 | 0.61†             | 3                  | ----                | 4/4/55      | Flooded                  |                       |                     |                   |                    |                     | ----              | ----               | ----                |  |  |            |                          |
| 4/21/55   | 32.1              | 23.5               | 21.3                | 2.44              | 2.15               | 155                 | ----              | 10                 | ----                | 4/21/55     | 26.5                     | 21.4                  | 24.0                | 2.49              | 2.23               | 140                 | ----              | ----               | ----                |  |  |            |                          |
| 5/12/55   | 18.7              | 16.7               | 13.5                | 1.42              | 1.54               | 300                 | MT                | ----               | ----                | 5/12/55     | 13.6                     | 20.9                  | 21.5                | 1.75              | 2.17               | 300                 | MT†               | ----               | ----                |  |  |            |                          |
| Burned over before 4/21/55                            |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Site 77, Monroe Co., N. Y.                            |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Solvay SL/SL (CL)                                     |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| 3/5/54  | 19.0              | 16.0               | 14.3                | 1.21              | 1.12               | 300                 | ----              | ----               | ----                | 8/6/54      | 68.3                     | 65.9                  | 110.6               | 2.37              | 3.29               | 146                 | ----              | ----               | ----                |  |  |            |                          |
| 3/20/54   | 15.2              | 11.9               | 13.2                | 1.02              | 0.83               | 291                 | ----              | ----               | ----                | 8/20/54     | 70.9                     | 58.8                  | 80.3                | 2.38              | 2.94               | 117                 | ----              | ----               | ----                |  |  |            |                          |
| 9/15/54   | 27.2              | 17.1               | 12.9                | 1.74              | 1.24               | 245                 | ----              | ----               | ----                | 9/15/54     | 74.1                     | 63.7                  | 113.0               | 3.11              | 3.43               | 113                 | ----              | ----               | ----                |  |  |            |                          |
| 10/21/54  | 34.1              | 31.0               | 22.5                | 2.13              | 2.17               | 160                 | ----              | ----               | ----                | 10/21/54    | 85.3                     | 66.9                  | 107.6               | 3.58              | 3.34               | 107                 | ----              | ----               | ----                |  |  |            |                          |
| 11/5/54   | 33.3              | 37.2               | 37.8                | 2.48              | 2.50               | 130                 | 0.42              | 5                  | ----                | 11/5/54     | Flooded                  |                       |                     |                   |                    |                     | ----              | ----               | ----                |  |  |            |                          |
| 4/4/55  | 33.5              | 49.2               | 27.9                | 3.35              | 3.44               | 116                 | ----              | ----               | ----                | 4/4/55      | Flooded                  |                       |                     |                   |                    |                     | ----              | ----               | ----                |  |  |            |                          |
| 4/21/55   | 50.0              | 4.5                | 39.1                | 3.20              | 3.25               | 81                  | ----              | ----               | ----                | 4/21/55     | Flooded                  |                       |                     |                   |                    |                     | ----              | ----               | ----                |  |  |            |                          |
| 5/12/55   | 43.5              | 40.3               | 30.9                | 2.72              | 2.35               | 150                 | 0.39              | ----               | ----                | 5/12/55     | Flooded                  |                       |                     |                   |                    |                     | ----              | ----               | ----                |  |  |            |                          |
| Bulk density and moisture content values questionable |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Site 79, Monroe Co., N. Y.                            |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Tonawanda SL/SL (CL)                                  |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| 3/1/54  | 23.7              | 13.0               | 17.5                | 1.84              | 1.73               | 300                 | ----              | ----               | ----                | 8/5/54      | 22.1                     | 18.7                  | 16.7                | 1.46              | 1.38               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 8/20/54   | 23.0              | 20.0               | 16.2                | 1.87              | 1.92               | 300                 | ----              | ----               | ----                | 8/20/54     | 24.4                     | 23.9                  | 19.7                | 1.61              | 1.77               | 264                 | ----              | ----               | ----                |  |  |            |                          |
| 9/15/54   | 24.7              | 22.7               | 21.4                | 2.11              | 2.20               | 282                 | ----              | ----               | ----                | 9/15/54     | 32.9                     | 22.0                  | 15.2                | 2.17              | 1.53               | 277                 | ----              | ----               | ----                |  |  |            |                          |
| 10/21/54  | 48.3              | 23.3               | 24.4                | 3.30              | 2.72               | 243                 | ----              | ----               | ----                | 10/21/54    | 49.8                     | 40.1                  | 26.6                | 3.29              | 2.97               | 162                 | ----              | ----               | ----                |  |  |            |                          |
| 11/5/54   | 30.0              | 27.3               | 27.9                | 2.65              | 2.62               | 219                 | 0.70              | ----               | ----                | 11/5/54     | 41.6                     | 39.3                  | 24.0                | 2.75              | 2.91               | 145                 | 0.74              | ----               | ----                |  |  |            |                          |
| 4/4/55  | Flooded           |                    |                     |                   |                    |                     | ----              | ----               | ----                | 4/4/55      | Flooded                  |                       |                     |                   |                    |                     | ----              | ----               | ----                |  |  |            |                          |
| 4/21/55   | 43.1              | 29.2               | 30.0                | 3.32              | 2.60               | 167                 | 0.56              | 1                  | ----                | 4/21/55     | 53.0                     | 41.3                  | 30.5                | 3.54              | 3.09               | 91                  | 0.70              | 5                  | ----                |  |  |            |                          |
| 5/12/55   | 25.2              | 22.0               | 23.3                | 2.17              | 2.17               | 300                 | MT                | ----               | ----                | 5/12/55     | 33.3                     | 34.5                  | 23.4                | 2.20              | 2.55               | 223                 | ----              | ----               | ----                |  |  |            |                          |
| Site 101, Fairfield Co., Conn.                        |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Herrin SL/SL (CL)                                     |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| 7/19/54   | 15.5              | 16.7               | 19.4                | 1.10              | 1.37               | 232                 | ----              | ----               | ----                | 7/19/54     | 36.4                     | 21.0                  | 16.3                | 2.33              | 1.62               | 206                 | ----              | ----               | ----                |  |  |            |                          |
| 8/10/54   | 26.2              | 24.5               | 22.3                | 1.35              | 2.01               | 169                 | ----              | ----               | ----                | 8/10/54     | 41.7                     | 32.2                  | 18.1                | 2.67              | 2.48               | 164                 | ----              | ----               | ----                |  |  |            |                          |
| 9/30/54   | 17.9              | 17.5               | 13.5                | 1.27              | 1.44               | 300                 | ----              | ----               | ----                | 9/30/54     | 38.5                     | 30.3                  | 24.1                | 2.46              | 2.37               | 181                 | ----              | ----               | ----                |  |  |            |                          |
| 9/21/54   | 24.3              | 29.4               | 28.1                | 2.47              | 2.33               | 124                 | 0.51              | ----               | ----                | 9/21/54     | 43.5                     | 32.4                  | 23.1                | 2.78              | 2.49               | 146                 | 0.77              | ----               | ----                |  |  |            |                          |
| 10/11/54  | 29.1              | 23.3               | 24.2                | 2.07              | 1.95               | 209                 | ----              | ----               | ----                | 10/11/54    | 42.2                     | 35.2                  | 28.3                | 2.70              | 2.71               | 150                 | ----              | ----               | ----                |  |  |            |                          |
| 4/11/55   | 35.4              | 31.3               | 29.1                | 2.51              | 2.57               | 149                 | 0.72              | ----               | ----                | 4/11/55     | 42.3                     | 32.4                  | 28.2                | 2.75              | 2.49               | 134                 | 0.71              | 18                 | ----                |  |  |            |                          |
| 5/3/55  | 33.6              | 27.5               | 23.5                | 2.39              | 2.25               | 181                 | ----              | ----               | ----                | 5/3/55      | 43.5                     | 32.7                  | 27.3                | 2.78              | 2.52               | 167                 | ----              | 24                 | ----                |  |  |            |                          |
| 5/23/55   | 20.3              | 21.5               | 21.3                | 1.49              | 1.77               | 201                 | ----              | ----               | ----                | 5/23/55     | 42.2                     | 33.1                  | 25.4                | 2.70              | 2.55               | 164                 | ----              | ----               | ----                |  |  |            |                          |
| Site 104, New Haven Co., Conn.                        |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Cheshire SL/SL (CL)                                   |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| 7/20/54   | 12.6              | 10.7               | 11.5                | 0.82              | 0.35               | 300                 | ----              | ----               | ----                | 7/20/54     | 13.4                     | 12.7                  | 10.9                | 1.11              | 1.09               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 8/10/54   | 29.0              | 26.7               | 15.8                | 1.38              | 2.11               | 179                 | ----              | ----               | ----                | 8/10/54     | 19.5                     | 20.8                  | 21.6                | 1.62              | 1.79               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 9/30/54   | 12.2              | 10.9               | 8.5                 | 0.79              | 0.86               | 300                 | ----              | ----               | ----                | 8/30/54     | 12.6                     | 13.8                  | 14.1                | 1.05              | 1.19               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 9/21/54   | 21.4              | 26.1               | 23.5                | 2.04              | 2.06               | 102                 | 1.01†             | ----               | ----                | 9/21/54     | 21.6                     | 23.0                  | 22.1                | 1.79              | 1.98               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 10/12/54  | 22.5              | 22.2               | 19.8                | 1.46              | 1.75               | 300                 | ----              | ----               | ----                | 10/12/54    | 13.3                     | 16.4                  | 16.4                | 1.56              | 1.41               | 300                 | ----              | ----               | ----                |  |  |            |                          |
| 4/11/55   | 27.4              | 27.0               | 23.4                | 1.73              | 2.13               | 176                 | 0.54              | ----               | ----                | 4/11/55     | 23.4                     | 22.0                  | 30.4                | 1.74              | 1.39               | 300                 | 0.65†             | ----               | ----                |  |  |            |                          |
| 5/9/55  | 35.2              | 29.0               | 25.6                | 2.29              | 2.29               | 152                 | 0.90              | ----               | ----                | 5/9/55      | 22.6                     | 22.5                  | 19.1                | 1.88              | 1.93               | 300                 | 0.57†             | ----               | ----                |  |  |            |                          |
| 5/23/55   | 22.1              | 21.7               | 22.0                | 1.44              | 1.72               | 116                 | ----              | ----               | ----                | 5/23/55     | 12.7                     | 16.1                  | 16.3                | 1.05              | 1.38               | 300+                | MT                | ----               | ----                |  |  |            |                          |
| Site 105, New Haven Co., Conn.                        |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Cheshire SL/SL (CL)                                   |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| 7/20/54   | 23.6              | 18.3               | 16.3                | 1.77              | 1.63               | 300                 | ----              | ----               | ----                | 7/20/54     | 24.1                     | 21.4                  | 19.9                | 1.54              | 1.37               | 234                 | ----              | ----               | ----                |  |  |            |                          |
| 8/10/54   | 32.7              | 25.9               | 23.5                | 2.45              | 2.31               | 160                 | ----              | ----               | ----                | 8/10/54     | 32.8                     | 25.9                  | 23.1                | 2.10              | 1.72               | 134                 | ----              | ----               | ----                |  |  |            |                          |
| 9/30/54   | 26.7              | 19.6               | 16.5                | 2.00              | 1.74               | 300                 | ----              | ----               | ----                | 9/30/54     | 25.2                     | 13.0                  | 10.9                | 1.71              | 1.15               | 282                 | ----              | ----               | ----                |  |  |            |                          |
| 9/21/54   | 30.1              | 22.3               | 20.2                | 2.26              | 1.98               | 152                 | 0.52              | ----               | ----                | 9/21/54     | 33.0                     | 24.7                  | 24.4                | 2.11              | 1.58               | 120                 | 0.62              | ----               | ----                |  |  |            |                          |
| 10/12/54  | 33.0              | 20.0               | 19.0                | 2.47              | 1.78               | 277                 | ----              | ----               | ----                | 10/12/54    | 31.5                     | 22.1                  | 22.1                | 2.02              | 1.41               | 221                 | ----              | ----               | ----                |  |  |            |                          |
| 4/11/55   | 33.3              | 23.3               | 20.6                | 2.30              | 2.07               | 195                 | 0.55              | ----               | ----                | 4/11/55     | 34.6                     | 25.4                  | 20.7                | 2.23              | 2.08               | 169                 | 0.71              | ----               | ----                |  |  |            |                          |
| 5/9/55  | 31.9              | 24.7               | 23.0                | 2.39              | 2.20               | 176                 | ----              | ----               | ----                | 5/9/55      | 38.7                     | 38.3                  | 36.1                | 2.43              | 2.32               | 167                 | ----              | ----               | ----                |  |  |            |                          |
| 5/23/55   | 22.6              | 18.8               | 18.3                | 1.70              | 1.77               | 228                 | ----              | ----               | ----                | 5/23/55     | 24.7                     | 22.5                  | 22.2                | 1.58              | 1.34               | 150                 | ----              | ----               | ----                |  |  |            |                          |
| Site 107, New Haven Co., Conn.                        |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |
| Ludlow L/L (CL-ML)                                    |                   |                    |                     |                   |                    |                     |                   |                    |                     |             |                          |                       |                     |                   |                    |                     |                   |                    |                     |  |  |            |                          |



Table B3b (Continued)  
Northeastern Region (Continued)

| Soil Moisture Content         |                    |                     |                     |                     |                   |                    |                     |                     |                     | Cone Index                    | Remold- ing Index | Depth to Water Table in. | Soil Moisture Content |                    |                     |                     |                     |                   |                    |                               |                     |                     | Cone Index | Remold- ing Index | Depth to Water Table in. |      |     |       |      |                               |          |      |      |      |      |      |     |       |      |      |
|-------------------------------|--------------------|---------------------|---------------------|---------------------|-------------------|--------------------|---------------------|---------------------|---------------------|-------------------------------|-------------------|--------------------------|-----------------------|--------------------|---------------------|---------------------|---------------------|-------------------|--------------------|-------------------------------|---------------------|---------------------|------------|-------------------|--------------------------|------|-----|-------|------|-------------------------------|----------|------|------|------|------|------|-----|-------|------|------|
| Percent Weight Basis          |                    |                     |                     |                     |                   |                    |                     |                     |                     |                               |                   |                          | Percent Weight Basis  |                    |                     |                     |                     |                   |                    |                               |                     |                     |            |                   |                          |      |     |       |      |                               |          |      |      |      |      |      |     |       |      |      |
| 0- to 6-in. Depth             | 6- to 12-in. Depth | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth |                               |                   |                          | 0- to 6-in. Depth     | 6- to 12-in. Depth | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth           | 18- to 24-in. Depth | 24- to 30-in. Depth |            |                   |                          |      |     |       |      |                               |          |      |      |      |      |      |     |       |      |      |
| Sample Date                   | Depth              | Depth               | Depth               | Depth               | Depth             | Depth              | Depth               | Depth               | Depth               | Sample Date                   | Depth             | Depth                    | Depth                 | Depth              | Depth               | Sample Date         | Depth               | Depth             | Depth              | Depth                         |                     |                     |            |                   |                          |      |     |       |      |                               |          |      |      |      |      |      |     |       |      |      |
| Site 109, Hartford Co., Conn. |                    |                     |                     |                     |                   |                    |                     |                     |                     | Site 109, Hartford Co., Conn. |                   |                          |                       |                    |                     |                     |                     |                   |                    | Site 110, Hartford Co., Conn. |                     |                     |            |                   |                          |      |     |       |      | Site 110, Hartford Co., Conn. |          |      |      |      |      |      |     |       |      |      |
| Shawmut Sil/Sil (CL)          |                    |                     |                     |                     |                   |                    |                     |                     |                     | Shawmut Sil/Sil (CL)          |                   |                          |                       |                    |                     |                     |                     |                   |                    | Shawmut Sil/Sil (CL)          |                     |                     |            |                   |                          |      |     |       |      | Shawmut Sil/Sil (CL)          |          |      |      |      |      |      |     |       |      |      |
| 7/20/54                       | 12.5               | 13.2                | 13.4                | 0.84                | 1.15              | 300                | ----                | ----                | ----                | 7/20/54                       | 32.9              | 23.3                     | 25.0                  | 2.34               | 2.41                | 300                 | ----                | ----              | ----               | ----                          | 7/21/54             | 13.4                | 15.6       | 21.6              | 0.95                     | 1.39 | 300 | ----  | ---- | ----                          | 7/21/54  | 13.9 | 16.7 | 22.4 | 1.10 | 1.37 | 300 | ----  | ---- | ---- |
| 8/10/54                       | 31.9               | 24.3                | 20.9                | 2.14                | 2.06              | 238                | ----                | ----                | ----                | 8/10/54                       | 39.5              | 30.2                     | 31.0                  | 2.30               | 2.63                | 155                 | ----                | ----              | ----               | ----                          | 8/10/54             | 34.4                | 25.3       | 27.3              | 2.44                     | 2.25 | 235 | ----  | ---- | ----                          | 8/10/54  | 34.4 | 25.3 | 27.3 | 2.44 | 2.25 | 235 | ----  | ---- | ---- |
| 9/30/54                       | 25.3               | 25.6                | 22.0                | 1.73                | 2.12              | 300                | ----                | ----                | ----                | 9/30/54                       | 30.6              | 28.7                     | 29.3                  | 2.17               | 2.44                | 258                 | ----                | ----              | ----               | ----                          | 9/30/54             | 23.3                | 20.0       | 23.7              | 1.55                     | 1.33 | 300 | ----  | ---- | ----                          | 9/30/54  | 23.3 | 20.0 | 23.7 | 1.55 | 1.33 | 300 | ----  | ---- | ---- |
| 9/20/54                       | 42.3               | 34.1                | 24.1                | 0.87                | 2.33              | 168                | 0.55                | ----                | ----                | 9/22/54                       | 36.0              | 30.2                     | 32.5                  | 2.56               | 2.57                | 158                 | 0.56                | ----              | ----               | ----                          | 9/22/54             | 39.0                | 27.8       | 30.5              | 2.77                     | 2.47 | 133 | 0.72  | ---- | ----                          | 9/22/54  | 39.0 | 27.8 | 30.5 | 2.77 | 2.47 | 133 | 0.72  | ---- | ---- |
| 10/12/54                      | 35.2               | 23.0                | 22.2                | 2.40                | 2.32              | 272                | ----                | ----                | ----                | 10/12/54                      | 33.6              | 32.3                     | 30.5                  | 2.39               | 2.79                | 212                 | ----                | ----              | ----               | ----                          | 10/12/54            | 38.3                | 26.5       | 27.3              | 2.75                     | 2.35 | 228 | ----  | ---- | ----                          | 10/12/54 | 38.3 | 26.5 | 27.3 | 2.75 | 2.35 | 228 | ----  | ---- | ---- |
| 4/12/55                       | 43.4               | 32.2                | 25.4                | 2.91                | 2.67              | 158                | 0.53                | ----                | ----                | 4/12/55                       | 41.6              | 29.8                     | 30.7                  | 2.95               | 2.53                | 156                 | 0.61                | 10                | 9                  | ----                          | 4/12/55             | 45.2                | 28.4       | 30.2              | 2.21                     | 2.63 | 153 | 0.57  | ---- | ----                          | 4/12/55  | 45.2 | 28.4 | 30.2 | 2.21 | 2.63 | 153 | 0.57  | ---- | ---- |
| 5/9/55                        | 44.0               | 33.1                | 26.5                | 2.35                | 2.75              | 181                | ----                | ----                | 11                  | 5/9/55                        | 44.4              | 34.1                     | 33.3                  | 3.15               | 2.90                | 162                 | ----                | ----              | ----               | ----                          | 5/9/55              | 45.2                | 30.3       | 32.6              | 1.28                     | 2.74 | 145 | ----  | ---- | ----                          | 5/9/55   | 45.2 | 30.3 | 32.6 | 1.28 | 2.74 | 145 | ----  | ---- | ---- |
| 5/23/55                       | 29.9               | 27.4                | 21.0                | 2.00                | 2.27              | 287                | ----                | ----                | ----                | 5/23/55                       | 36.5              | 30.4                     | 33.2                  | 2.59               | 2.58                | 173                 | ----                | ----              | ----               | ----                          | 5/23/55             | 33.1                | 23.7       | 26.4              | 2.35                     | 2.11 | 206 | ----  | ---- | ----                          | 5/23/55  | 33.1 | 23.7 | 26.4 | 2.35 | 2.11 | 206 | ----  | ---- | ---- |
| Site 111, Hartford Co., Conn. |                    |                     |                     |                     |                   |                    |                     |                     |                     | Site 111, Hartford Co., Conn. |                   |                          |                       |                    |                     |                     |                     |                   |                    | Site 112, Hartford Co., Conn. |                     |                     |            |                   |                          |      |     |       |      | Site 112, Hartford Co., Conn. |          |      |      |      |      |      |     |       |      |      |
| Madley Sil/Sil (ML)           |                    |                     |                     |                     |                   |                    |                     |                     |                     | Madley Sil/Sil (ML)           |                   |                          |                       |                    |                     |                     |                     |                   |                    | Garver, LS/LS (SL)            |                     |                     |            |                   |                          |      |     |       |      | Garver, LS/LS (SL)            |          |      |      |      |      |      |     |       |      |      |
| 7/21/54                       | 13.9               | 16.7                | 22.4                | 1.10                | 1.37              | 300                | ----                | ----                | ----                | 7/21/54                       | 14.5              | 7.0                      | 5.3                   | 0.94               | 0.53                | 266                 | ----                | ----              | ----               | ----                          | 7/21/54             | 8.0                 | 3.6        | 1.5               | 0.51                     | 0.32 | 170 | ----  | ---- | ----                          | 7/21/54  | 8.0  | 3.6  | 1.5  | 0.51 | 0.32 | 170 | ----  | ---- | ---- |
| 8/10/54                       | 29.6               | 24.6                | 26.9                | 2.34                | 2.02              | 205                | ----                | ----                | ----                | 8/10/54                       | 20.3              | 15.5                     | 11.6                  | 1.32               | 1.18                | 209                 | ----                | ----              | ----               | ----                          | 8/10/54             | 19.3                | 9.6        | 9.2               | 1.17                     | 0.35 | 137 | ----  | ---- | ----                          | 8/10/54  | 19.3 | 9.6  | 9.2  | 1.17 | 0.35 | 137 | ----  | ---- | ---- |
| 8/30/54                       | 21.2               | 20.9                | 22.4                | 1.87                | 1.71              | 274                | ----                | ----                | ----                | 8/30/54                       | 10.6              | 6.5                      | 5.4                   | 0.69               | 0.49                | 300                 | ----                | ----              | ----               | ----                          | 8/30/54             | 11.7                | 4.7        | 4.4               | 0.75                     | 0.44 | 213 | ----  | ---- | ----                          | 8/30/54  | 11.7 | 4.7  | 4.4  | 0.75 | 0.44 | 213 | ----  | ---- | ---- |
| 9/22/54                       | 29.2               | 27.9                | 31.5                | 2.31                | 2.29              | 175                | NT                  | ----                | ----                | 9/22/54                       | 28.1              | 22.9                     | 24.8                  | 1.83               | 1.74                | 120                 | 0.56                | ----              | ----               | ----                          | 9/22/54             | 17.7                | 10.5       | 11.3              | 1.13                     | 0.93 | 117 | NT    | ---- | ----                          | 9/22/54  | 17.7 | 10.5 | 11.3 | 1.13 | 0.93 | 117 | NT    | ---- | ---- |
| 10/12/54                      | 25.5               | 23.0                | 26.8                | 2.09                | 1.87              | 266                | ----                | ----                | ----                | 10/12/54                      | 26.7              | 19.7                     | 21.4                  | 1.73               | 1.50                | 207                 | ----                | ----              | ----               | ----                          | 10/12/54            | 14.9                | 5.8        | 3.0               | 0.95                     | 0.78 | 141 | ----  | ---- | ----                          | 10/12/54 | 14.9 | 5.8  | 3.0  | 0.95 | 0.78 | 141 | ----  | ---- | ---- |
| 4/12/55                       | 33.3               | 29.4                | 31.2                | 2.67                | 2.41              | 192                | 0.84                | ----                | ----                | 4/12/55                       | 36.6              | 28.4                     | 28.1                  | 2.36               | 2.16                | 143                 | 1.84*               | ----              | ----               | ----                          | 4/12/55             | 13.6                | 9.3        | 11.6              | 1.19                     | 0.87 | 147 | 1.42  | ---- | ----                          | 4/12/55  | 13.6 | 9.3  | 11.6 | 1.19 | 0.87 | 147 | 1.42  | ---- | ---- |
| 5/9/55                        | 34.1               | 30.7                | 31.2                | 2.69                | 2.52              | 209                | 0.78                | ----                | ----                | 5/9/55                        | 37.5              | 26.2                     | 27.2                  | 2.44               | 1.99                | 151                 | 0.74                | ----              | ----               | ----                          | 5/9/55              | 20.0                | 12.4       | 12.4              | 1.26                     | 1.10 | 1.7 | ----  | ---- | ----                          | 5/9/55   | 20.0 | 12.4 | 12.4 | 1.26 | 1.10 | 1.7 | ----  | ---- | ---- |
| 5/23/55                       | 28.0               | 22.3                | 25.3                | 2.21                | 1.87              | 196                | ----                | ----                | ----                | 5/23/55                       | 34.2              | 22.6                     | 23.7                  | 2.22               | 1.72                | 117                 | ----                | ----              | ----               | ----                          | 5/23/55             | 17.0                | 9.0        | 10.1              | 1.09                     | 0.90 | 107 | ----  | ---- | ----                          | 5/23/55  | 17.0 | 9.0  | 10.1 | 1.09 | 0.90 | 107 | ----  | ---- | ---- |
| Site 113, Hartford Co., Conn. |                    |                     |                     |                     |                   |                    |                     |                     |                     | Site 113, Hartford Co., Conn. |                   |                          |                       |                    |                     |                     |                     |                   |                    | Site 114, Hartford Co., Conn. |                     |                     |            |                   |                          |      |     |       |      | Site 114, Hartford Co., Conn. |          |      |      |      |      |      |     |       |      |      |
| Merrimac Sil/Sil (SL)         |                    |                     |                     |                     |                   |                    |                     |                     |                     | Merrimac Sil/Sil (SL)         |                   |                          |                       |                    |                     |                     |                     |                   |                    | Merrimac LS/LS (SL)           |                     |                     |            |                   |                          |      |     |       |      | Merrimac LS/LS (SL)           |          |      |      |      |      |      |     |       |      |      |
| 7/21/54                       | 14.5               | 7.0                 | 5.3                 | 0.94                | 0.53              | 266                | ----                | ----                | ----                | 7/21/54                       | 14.5              | 7.0                      | 5.3                   | 0.94               | 0.53                | 266                 | ----                | ----              | ----               | ----                          | 7/21/54             | 10.5                | 8.1        | 8.6               | 0.97                     | 0.76 | 260 | ----  | ---- | ----                          | 7/21/54  | 10.5 | 8.1  | 8.6  | 0.97 | 0.76 | 260 | ----  | ---- | ---- |
| 8/10/54                       | 20.3               | 15.5                | 11.6                | 1.32                | 1.18              | 209                | ----                | ----                | ----                | 8/10/54                       | 20.3              | 15.5                     | 11.6                  | 1.32               | 1.18                | 209                 | ----                | ----              | ----               | ----                          | 8/10/54             | 19.3                | 9.6        | 9.2               | 1.17                     | 0.35 | 137 | ----  | ---- | ----                          | 8/10/54  | 19.3 | 9.6  | 9.2  | 1.17 | 0.35 | 137 | ----  | ---- | ---- |
| 8/30/54                       | 10.6               | 6.5                 | 5.4                 | 0.69                | 0.49              | 300                | ----                | ----                | ----                | 8/30/54                       | 10.6              | 6.5                      | 5.4                   | 0.69               | 0.49                | 300                 | ----                | ----              | ----               | ----                          | 8/30/54             | 11.7                | 4.7        | 4.4               | 0.75                     | 0.44 | 213 | ----  | ---- | ----                          | 8/30/54  | 11.7 | 4.7  | 4.4  | 0.75 | 0.44 | 213 | ----  | ---- | ---- |
| 9/22/54                       | 28.1               | 22.9                | 24.8                | 1.83                | 1.74              | 120                | 0.56                | ----                | ----                | 9/22/54                       | 28.1              | 22.9                     | 24.8                  | 1.83               | 1.74                | 120                 | 0.56                | ----              | ----               | ----                          | 9/22/54             | 17.7                | 10.5       | 11.3              | 1.13                     | 0.93 | 117 | NT    | ---- | ----                          | 9/22/54  | 17.7 | 10.5 | 11.3 | 1.13 | 0.93 | 117 | NT    | ---- | ---- |
| 10/12/54                      | 26.7               | 19.7                | 21.4                | 1.73                | 1.50              | 207                | ----                | ----                | ----                | 10/12/54                      | 26.7              | 19.7                     | 21.4                  | 1.73               | 1.50                | 207                 | ----                | ----              | ----               | ----                          | 10/12/54            | 14.9                | 5.8        | 3.0               | 0.95                     | 0.78 | 141 | ----  | ---- | ----                          | 10/12/54 | 14.9 | 5.8  | 3.0  | 0.95 | 0.78 | 141 | ----  | ---- | ---- |
| 4/12/55                       | 36.6               | 28.4                | 28.1                | 2.36                | 2.16              | 143                | 1.84*               | ----                | ----                | 4/12/55                       | 36.6              | 28.4                     | 28.1                  | 2.36               | 2.16                | 143                 | 1.84*               | ----              | ----               | ----                          | 4/12/55             | 13.6                | 9.3        | 11.6              | 1.19                     | 0.87 | 147 | 1.42  | ---- | ----                          | 4/12/55  | 13.6 | 9.3  | 11.6 | 1.19 | 0.87 | 147 | 1.42  | ---- | ---- |
| 5/9/55                        | 37.5               | 26.2                | 27.2                | 2.44                | 1.99              | 151                | 0.74                | ----                | ----                | 5/9/55                        | 37.5              | 26.2                     | 27.2                  | 2.44               | 1.99                | 151                 | 0.74                | ----              | ----               | ----                          | 5/9/55              | 20.0                | 12.4       | 12.4              | 1.26                     | 1.10 | 1.7 | ----  | ---- | ----                          | 5/9/55   | 20.0 | 12.4 | 12.4 | 1.26 | 1.10 | 1.7 | ----  | ---- | ---- |
| 5/23/55                       | 34.2               | 22.6                | 23.7                | 2.22                | 1.72              | 117                | ----                | ----                | ----                | 5/23/55                       | 34.2              | 22.6                     | 23.7                  | 2.22               | 1.72                | 117                 | ----                | ----              | ----               | ----                          | 5/23/55             | 17.0                | 9.0        | 10.1              | 1.09                     | 0.90 | 107 | ----  | ---- | ----                          | 5/23/55  | 17.0 | 9.0  | 10.1 | 1.09 | 0.90 | 107 | ----  | ---- | ---- |
| Site 115, Hartford Co., Conn. |                    |                     |                     |                     |                   |                    |                     |                     |                     | Site 115, Hartford Co., Conn. |                   |                          |                       |                    |                     |                     |                     |                   |                    | Site 116, Tolland Co., Conn.  |                     |                     |            |                   |                          |      |     |       |      | Site 116, Tolland Co., Conn.  |          |      |      |      |      |      |     |       |      |      |
| Merrimac Sil/Sil (SL)         |                    |                     |                     |                     |                   |                    |                     |                     |                     | Merrimac Sil/Sil (SL)         |                   |                          |                       |                    |                     |                     |                     |                   |                    | Infield Sil/Sil (ML)          |                     |                     |            |                   |                          |      |     |       |      | Infield Sil/Sil (ML)          |          |      |      |      |      |      |     |       |      |      |
| 7/21/54                       | 9.9                | 6.6                 | 6.3                 | 0.86                | 0.65              | 243                | ----                | ----                | ----                | 7/21/54                       | 9.9               | 6.6                      | 6.3                   | 0.86               | 0.65                | 243                 | ----                | ----              | ----               | ----                          | 7/21/54             | 21.9                | 16.3       | 15.7              | 0.90                     | 1.09 | 193 | ----  | ---- | ----                          | 7/21/54  | 21.9 | 16.3 | 15.7 | 0.90 | 1.09 | 193 | ----  | ---- | ---- |
| 8/11/54                       | 19.0               | 15.6                | 15.1                | 1.65                | 1.54              | 221                | ----                | ----                | ----                | 8/11/54                       | 19.0              | 15.6                     | 15.1                  | 1.65               | 1.54                | 221                 | ----                | ----              | ----               | ----                          | 8/11/54             | 15.7                | 15.7       | 14.0              | 1.54                     | 1.48 | 179 | ----  | ---- | ----                          | 8/11/54  | 15.7 | 15.7 | 14.0 | 1.54 | 1.48 | 179 | ----  | ---- | ---- |
| 8/31/54                       | 22.8               | 18.3                | 16.9                | 1.98                | 1.81              | 177                | NT                  | ----                | ----                | 8/31/54                       | 22.8              | 18.3                     | 16.9                  | 1.98               | 1.81                | 177                 | NT                  | ----              | ----               | ----                          | 8/31/54             | 22.9                | 18.2       | 15.2              | 2.11                     | 1.71 | 175 | NT    | ---- | ----                          | 8/31/54  | 22.9 | 18.2 | 15.2 | 2.11 | 1.71 | 175 | NT    | ---- | ---- |
| 9/22/54                       | 19.4               | 16.8                | 17.5                | 1.69                | 1.66              | 192                | ----                | ----                | ----                | 9/22/54                       | 19.4              | 16.8                     | 17.5                  | 1.69               | 1.66                | 192                 | ----                | ----              | ----               | ----                          | 9/22/54             | 16.9                | 15.3       | 14.1              | 1.55                     | 1.44 | 201 | ----  | ---- | ----                          | 9/22/54  | 16.9 | 15.3 | 14.1 | 1.55 | 1.44 | 201 | ----  | ---- | ---- |
| 10/12/54                      | 16.8               | 14.8                | 15.1                | 1.45                | 1.47              | 213                | ----                | ----                | ----                | 10/12/54                      | 16.8              | 14.8                     | 15.1                  | 1.45               | 1.47                | 213                 | ----                | ----              | ----               | ----                          | 10/12/54            | 13.5                | 11.6       | 11.0              | 1.25                     | 1.29 | 235 | ----  | ---- | ----                          | 10/12/54 | 13.5 | 11.6 | 11.0 | 1.25 | 1.29 | 235 | ----  | ---- | ---- |
| 4/12/55                       | 20.7               | 18.0                | 15.0                | 1.80                | 1.78              | 171                | 1.74*               | ----                | ----                | 4/12/55                       | 20.7              | 18.0                     | 15.0                  | 1.80               | 1.78                | 171                 | 1.74*               | ----              | ----               | ----                          | 4/12/55             | 17.7                | 16.0       | 14.1              | 1.63                     | 1.50 | 181 | 1.03* | ---- | ----                          | 4/12/55  | 17.7 | 16.0 | 14.1 | 1.63 | 1.50 | 181 | 1.03* | ---- | ---- |
| 5/9/55                        | 19.7               | 18.0                | 17.7                | 1.71                | 1.78              | 172                | ----                | ----                | ----                | 5/9/55                        | 19.7              | 18.0                     | 17.7                  | 1.71               | 1.78                | 172                 | ----                | ----              | ----               | ----                          | 5/9/55              | 13.3                | 14.9       | 13.4              | 1.58                     | 1.40 | 171 | ----  | ---- | ----                          | 5/9/55   | 13.3 | 14.9 | 13.4 | 1.58 | 1.40 | 171 | ----  | ---- | ---- |
| 5/23/55                       | 17.5               | 14.8                | 14.2                | 1.55                | 1.47              | 155                | ----                | ----                | ----                | 5/23/55                       | 17.5              | 14.8                     | 14.2                  | 1.55               | 1.47                | 155                 | ----                | ----              | ----               | ----                          | 5/23/55             | 9.6                 | 10.9       | 11.4              | 0.88                     | 1.02 | 176 | ----  | ---- | ----                          | 5/23/55  | 9.6  | 10.9 | 11.4 | 0.88 | 1.02 | 176 | ----  | ---- | ---- |
| Site 117, Tolland Co., Conn.  |                    |                     |                     |                     |                   |                    |                     |                     |                     | Site 117, Tolland Co., Conn.  |                   |                          |                       |                    |                     |                     |                     |                   |                    | Site 118, Tolland Co., Conn.  |                     |                     |            |                   |                          |      |     |       |      | Site 118, Tolland Co., Conn.  |          |      |      |      |      |      |     |       |      |      |
| Infield Sil/Sil (ML)          |                    |                     |                     |                     |                   |                    |                     |                     |                     | Infield Sil/Sil (ML)          |                   |                          |                       |                    |                     |                     |                     |                   |                    | Infield Sil/Sil (ML)          |                     |                     |            |                   |                          |      |     |       |      | Infield Sil/Sil (ML)          |          |      |      |      |      |      |     |       |      |      |
| 7/21/54                       | 13.7               | 9.3                 | 7.9                 | 1.07                | 0.83              | 300                | ----                | ----                | ----                | 7/21/54                       | 13.7              | 9.3                      | 7.9                   | 1.07               | 0.83                | 300                 | ----                | ----              | ----               | ----                          | 7/21/54             | 21.9                | 16.3       | 15.7              | 0.90                     | 1.09 | 193 | ----  | ---- | ----                          | 7/21/54  | 21.9 | 16.3 | 15.7 | 0.90 | 1.09 | 193 | ----  | ---- | ---- |
| 8/11/54                       | 19.7               | 16.3                | 13.2                | 1.54                | 1.39              | 300                | ----                | ----                | ----                | 8/11/54                       | 19.7              | 16.3                     | 13.2                  | 1.54               | 1.39                | 300                 |                     |                   |                    |                               |                     |                     |            |                   |                          |      |     |       |      |                               |          |      |      |      |      |      |     |       |      |      |



Northeastern Region (Continued)

\* Measurement of 0- to 6-in. layer.

(Continued)



Table B3b (Continued)  
Northeastern Region (Continued)

| Sample Date   | Soil Moisture Content |                    |                     |                     |                     |                   | Cone Index | Remolding Index | Depth to Water Table in. | Sample Date | Soil Moisture Content |                     |                     |                     |                   |                    | Cone Index | Remolding Index | Depth to Water Table in. |                     |                     |                     |  |  |  |  |  |  |
|---|-----------------------|--------------------|---------------------|---------------------|---------------------|-------------------|------------|-----------------|--------------------------|-------------|-----------------------|---------------------|---------------------|---------------------|-------------------|--------------------|------------|-----------------|--------------------------|---------------------|---------------------|---------------------|--|--|--|--|--|--|
|   | Percent Weight Basis  |                    | in./5 in.           |                     | in./5 in.           |                   |            |                 |                          |             | Percent Weight Basis  |                     | in./5 in.           |                     | in./5 in.         |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
|   | 0- to 6-in. Depth     | 6- to 12-in. Depth | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth | 0- to 6-in. Depth |            |                 |                          |             | 6- to 12-in. Depth    | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth |            |                 |                          | 12- to 18-in. Depth | 18- to 24-in. Depth | 24- to 30-in. Depth |  |  |  |  |  |  |
| Site 135, Franklin Co., Mass.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Warrimac SL/SIL (SL)  |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/23/54   | 10.2                  | 7.1                | 4.5                 | 0.71                | 0.57                | 127               | ----       | ----            | 7/23/54                  | 56.9        | 49.7                  | 32.2                | 3.00                | 4.97                | 120               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/11/54   | 13.0                  | 11.6               | 7.7                 | 1.25                | 0.34                | 103               | ----       | ----            | 3/11/54                  | 50.9        | 50.9                  | 37.3                | 3.00                | 5.09                | 201               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/1/54  | 15.7                  | 12.2               | 10.4                | 1.10                | 0.99                | 113               | ----       | ----            | 9/2/54                   | 43.2        | 39.0                  | 31.2                | 2.84                | 3.90                | 214               | 0.43               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 15.1                  | 11.0               | 9.5                 | 1.27                | 0.39                | 113               | MT         | ----            | 9/24/54                  | 54.2        | 50.1                  | 35.0                | 3.00                | 5.11                | 211               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 10/13/54  | 15.3                  | 12.4               | 10.5                | 1.13                | 1.00                | 137               | ----       | ----            | 10/13/54                 | 49.3        | 53.0                  | 35.9                | 2.91                | 6.30                | 152               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 4/13/55   | 25.2                  | 32.2               | 13.0                | 1.75                | 1.90                | 138               | 1.52*      | ----            | 4/13/55                  | 47.4        | 40.2                  | 34.5                | 2.80                | 6.02                | 184               | 0.44               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/9/55  | 17.8                  | 12.1               | 10.3                | 1.25                | 0.98                | 142               | ----       | ----            | 5/10/55                  | 56.9        | 46.5                  | 30.1                | 3.36                | 4.65                | 156               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/24/55   | 13.4                  | 10.2               | 8.7                 | 0.94                | 0.83                | 45                | ----       | ----            | 5/24/55                  | 60.0        | 45.1                  | 35.1                | 3.54                | 4.51                | 139               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Bulk density and moisture content values questionable   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Site 138, Hillsborough Co., N. H.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Warrimac SL/SIL (SL)  |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/23/54   | 28.7                  | 17.1               | 15.4                | 1.78                | 1.15                | 300               | ----       | ----            | 7/23/54                  | 33.9        | 18.0                  | 18.6                | 2.06                | 1.34                | 300               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 8/11/54   | 40.2                  | 33.3               | 23.3                | 2.62                | 2.30                | 192               | ----       | ----            | 8/11/54                  | 34.0        | 22.7                  | 24.3                | 2.89                | 2.32                | 184               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/2/54  | 29.0                  | 27.3               | 23.3                | 1.80                | 1.33                | 246               | ----       | ----            | 9/2/54                   | 32.1        | 22.4                  | 31.3                | 2.73                | 2.23                | 217               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 31.9                  | 29.8               | 19.2                | 1.98                | 0.66                | 213               | MT**       | ----            | 9/24/54                  | 39.4        | 27.0                  | 26.5                | 3.35                | 2.75                | 197               | MT**               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 10/14/54  | 30.1                  | 25.9               | 14.9                | 1.87                | 1.79                | 242               | MT**       | ----            | 10/14/54                 | 39.8        | 35.1                  | 33.3                | 3.38                | 2.37                | 333               | MT**               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 4/13/55   | 35.0                  | 20.0               | 19.3                | 2.17                | 1.93                | 228               | MT**       | ----            | 4/13/55                  | 33.6        | 30.4                  | 32.2                | 2.86                | 3.10                | 173               | MT**               | 6          |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/10/55   | 30.6                  | 17.9               | 17.2                | 1.90                | 1.24                | 235               | ----       | ----            | 5/10/55                  | 30.1        | 27.1                  | 30.8                | 2.56                | 2.76                | 175               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/24/55   | 19.2                  | 17.3               | 15.3                | 1.19                | 1.19                | 289               | ----       | ----            | 5/24/55                  | 31.6        | 14.0                  | 22.4                | 2.69                | 1.43                | 136               | ----               | 26         |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| All cone index readings erratic because of rocks. Bulk density and moisture content values questionable |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Site 139, Hillsborough Co., N. H.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Runney LS/SIL (SL)  |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/23/54   | 28.7                  | 17.1               | 15.4                | 1.78                | 1.15                | 300               | ----       | ----            | 7/23/54                  | 33.9        | 18.0                  | 18.6                | 2.06                | 1.34                | 300               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 8/11/54   | 40.2                  | 33.3               | 23.3                | 2.62                | 2.30                | 192               | ----       | ----            | 8/11/54                  | 34.0        | 22.7                  | 24.3                | 2.89                | 2.32                | 184               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/2/54  | 29.0                  | 27.3               | 23.3                | 1.80                | 1.33                | 246               | ----       | ----            | 9/2/54                   | 32.1        | 22.4                  | 31.3                | 2.73                | 2.23                | 217               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 31.9                  | 29.8               | 19.2                | 1.98                | 0.66                | 213               | MT**       | ----            | 9/24/54                  | 39.4        | 27.0                  | 26.5                | 3.35                | 2.75                | 197               | MT**               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 10/14/54  | 30.1                  | 25.9               | 14.9                | 1.87                | 1.79                | 242               | MT**       | ----            | 10/14/54                 | 39.8        | 35.1                  | 33.3                | 3.38                | 2.37                | 333               | MT**               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 4/13/55   | 35.0                  | 20.0               | 19.3                | 2.17                | 1.93                | 228               | MT**       | ----            | 4/13/55                  | 33.6        | 30.4                  | 32.2                | 2.86                | 3.10                | 173               | MT**               | 6          |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/10/55   | 30.6                  | 17.9               | 17.2                | 1.90                | 1.24                | 235               | ----       | ----            | 5/10/55                  | 30.1        | 27.1                  | 30.8                | 2.56                | 2.76                | 175               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/24/55   | 19.2                  | 17.3               | 15.3                | 1.19                | 1.19                | 289               | ----       | ----            | 5/24/55                  | 31.6        | 14.0                  | 22.4                | 2.69                | 1.43                | 136               | ----               | 26         |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| All cone index readings erratic because of rocks. Bulk density and moisture content values questionable |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Site 140, Sullivan Co., N. H.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Acton SL/SIL (ML)   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/24/54   | 24.1                  | 21.2               | 17.2                | 1.59                | 1.33                | 170               | ----       | ----            | 7/24/54                  | 46.8        | 54.6                  | 48.3                | 2.76                | 3.11                | 127               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 8/12/54   | 26.1                  | 22.0               | 25.0                | 1.72                | 1.43                | 148               | ----       | ----            | 8/12/54                  | 50.9        | 55.3                  | 46.1                | 3.00                | 3.15                | 132               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/2/54  | 32.7                  | 33.3               | 25.0                | 2.16                | 2.16                | 181               | MT         | ----            | 9/2/54                   | 41.2        | 54.8                  | 44.9                | 2.43                | 3.12                | 172               | 0.56               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 31.5                  | 33.3               | 27.7                | 2.08                | 2.16                | 145               | ----       | ----            | 9/24/54                  | 56.9        | 65.1                  | 60.4                | 3.36                | 3.71                | 122               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 10/14/54  | 30.2                  | 27.0               | 20.2                | 1.99                | 1.76                | 197               | ----       | ----            | 10/14/54                 | 49.1        | 53.7                  | 45.7                | 2.90                | 3.06                | 162               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 4/20/55   | 45.4                  | 58.1               | 33.9                | 3.00                | 3.78                | ----              | ----       | ----            | 4/20/55                  | 34.1        | 32.2                  | 33.1                | 2.01                | 1.84                | Frost             | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/12/55   | 32.4                  | 32.2               | 24.3                | 2.14                | 2.09                | 195               | MT         | ----            | 5/12/55                  | 52.8        | 56.2                  | 58.3                | 3.12                | 3.20                | 146               | 0.58               | 6          |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/26/55   | 32.5                  | 29.5               | 24.6                | 2.15                | 1.92                | 118               | ----       | ----            | 5/26/55                  | 43.7        | 52.4                  | 53.8                | 2.58                | 2.99                | 98                | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Site 142, Sullivan Co., N. H.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Colton SL/SIL (SL)  |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/24/54   | 33.7                  | 23.1               | 23.6                | 1.75                | 1.76                | 251               | ----       | ----            | 7/24/54                  | 41.1        | 30.4                  | 42.1                | 2.92                | 2.68                | 148               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 8/12/54   | 31.3                  | 23.7               | 22.7                | 1.63                | 1.80                | 191               | ----       | ----            | 8/12/54                  | 48.7        | 33.3                  | 45.6                | 3.16                | 2.93                | 136               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/2/54  | 34.2                  | 21.7               | 20.8                | 1.78                | 1.65                | 193               | ----       | ----            | 9/2/54                   | 40.6        | 29.4                  | 41.8                | 2.88                | 2.59                | 144               | 0.54               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 37.0                  | 22.7               | 27.4                | 1.92                | 1.73                | 140               | ----       | ----            | 9/24/54                  | 47.9        | 34.9                  | 45.5                | 3.40                | 3.07                | 124               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 10/14/54  | 36.3                  | 24.3               | 26.7                | 1.89                | 1.85                | 255               | 0.74†      | ----            | 10/14/54                 | 37.6        | 28.8                  | 38.7                | 2.67                | 2.53                | 142               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 4/20/55   | 49.5                  | 34.3               | 23.3                | 2.57                | 2.61                | Frost             | ----       | ----            | 5/12/55                  | 46.9        | 31.0                  | 44.5                | 3.33                | 2.72                | 140               | 0.46               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/12/55   | 34.3                  | 29.1               | 21.3                | 1.81                | 2.25                | 264               | 0.76†      | ----            | 5/26/55                  | 41.6        | 30.6                  | 44.3                | 2.95                | 2.69                | 116               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/26/55   | 35.5                  | 26.2               | 24.2                | 1.85                | 1.99                | 181               | ----       | ----            |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Site 144, Sullivan Co., N. H.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Agawan SIL/SIL (ML)   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/24/54   | 27.7                  | 28.7               | 26.6                | 1.97                | 2.12                | 181               | ----       | ----            | 7/24/54                  | 23.5        | 19.1                  | 20.5                | 1.72                | 1.47                | 281               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 8/12/54   | 27.5                  | 32.1               | 25.4                | 1.95                | 2.38                | 205               | ----       | ----            | 8/12/54                  | 23.8        | 18.4                  | 16.7                | 1.74                | 1.42                | 276               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/2/54  | 34.6                  | 34.8               | 30.1                | 2.46                | 2.58                | 211               | 0.88       | ----            | 9/2/54                   | 29.7        | 28.3                  | 20.5                | 2.17                | 2.18                | 245               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 34.6                  | 35.0               | 29.1                | 2.46                | 2.48                | 173               | ----       | ----            | 9/24/54                  | 27.9        | 26.8                  | 24.2                | 2.04                | 2.06                | 215               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 10/14/54  | 30.7                  | 30.6               | 24.7                | 2.13                | 2.17                | 215               | ----       | ----            | 10/14/54                 | 23.3        | 21.1                  | 18.7                | 1.70                | 1.62                | 252               | MT                 | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 4/20/55   | 35.5                  | 33.7               | 32.6                | 2.52                | 2.49                | ----              | ----       | ----            | 4/20/55                  | 35.2        | 28.6                  | 30.7                | 2.57                | 2.20                | 186               | MT                 | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/12/55   | 32.1                  | 33.3               | 27.5                | 2.28                | 2.46                | 214               | MT         | ----            | 5/12/55                  | 31.9        | 26.6                  | 24.7                | 2.33                | 2.05                | 157               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/26/55   | 29.1                  | 29.4               | 25.3                | 2.07                | 2.18                | 158               | ----       | ----            |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Site 145, Sullivan Co., N. H.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Winoski SL/SIL (ML)   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/24/54   | 27.7                  | 28.7               | 26.6                | 1.97                | 2.12                | 181               | ----       | ----            | 7/24/54                  | 23.5        | 19.1                  | 20.5                | 1.72                | 1.47                | 281               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 8/12/54   | 27.5                  | 32.1               | 25.4                | 1.95                | 2.38                | 205               | ----       | ----            | 8/12/54                  | 23.8        | 18.4                  | 16.7                | 1.74                | 1.42                | 276               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/2/54  | 34.6                  | 34.8               | 30.1                | 2.46                | 2.58                | 211               | 0.88       | ----            | 9/2/54                   | 29.7        | 28.3                  | 20.5                | 2.17                | 2.18                | 245               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 34.6                  | 35.0               | 29.1                | 2.46                | 2.48                | 173               | ----       | ----            | 9/24/54                  | 27.9        | 26.8                  | 24.2                | 2.04                | 2.06                | 215               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 10/14/54  | 30.7                  | 30.6               | 24.7                | 2.13                | 2.17                | 215               | ----       | ----            | 10/14/54                 | 23.3        | 21.1                  | 18.7                | 1.70                | 1.62                | 252               | MT                 | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 4/20/55   | 35.5                  | 33.7               | 32.6                | 2.52                | 2.49                | ----              | ----       | ----            | 4/20/55                  | 35.2        | 28.6                  | 30.7                | 2.57                | 2.20                | 186               | MT                 | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/12/55   | 32.1                  | 33.3               | 27.5                | 2.28                | 2.46                | 214               | MT         | ----            | 5/12/55                  | 31.9        | 26.6                  | 24.7                | 2.33                | 2.05                | 157               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/26/55   | 29.1                  | 29.4               | 25.3                | 2.07                | 2.18                | 158               | ----       | ----            |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Site 146, Winsor Co., Vt.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Buxton SIL/SIL (CL-ML)  |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/24/54   | 34.6                  | 33.1               | 33.0                | 2.63                | 2.75                | 204               | ----       | ----            | 7/24/54                  | 37.1        | 31.3                  | 37.6                | 2.60                | 2.69                | 209               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 8/12/54   | 34.1                  | 30.5               | 32.7                | 2.59                | 2.53                | 204               | ----       | ----            | 8/12/54                  | 27.3        | 27.7                  | 37.2                | 1.91                | 2.38                | 300               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/2/54  | 37.8                  | 34.2               | 35.9                | 2.87                | 2.84                | 214               | 0.34       | ----            | 9/2/54                   | 32.0        | 34.2                  | 39.9                | 2.24                | 2.93                | 209               | 0.86               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 35.2                  | 34.1               | 34.0                | 2.68                | 2.83                | 139               | ----       | ----            | 9/24/54                  | 34.4        | 32.4                  | 33.7                | 2.41                | 2.79                | 216               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 10/14/54  | 34.1                  | 32.0               | 35.3                | 2.59                | 2.66                | 202               | ----       | ----            | 10/14/54                 | 29.8        | 29.4                  | 36.5                | 2.09                | 2.53                | 234               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 4/20/55   | 40.0                  | 37.5               | 41.7                | 3.04                | 3.12                | ----              | ----       | ----            | 4/20/55                  | 33.5        | 31.1                  | 38.0                | 2.34                | 2.67                | 202               | MT                 | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/12/55   | 40.8                  | 36.4               | 34.5                | 3.10                | 3.02                | 157               | 0.43       | ----            | 5/12/55                  | 34.7        | 28.5                  | 37.9                | 2.43                | 2.45                | 234               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/26/55   | 36.4                  | 32.6               | 33.7                | 2.77                | 2.71                | 116               | ----       | ----            |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Site 147, Winsor Co., Vt.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Buxton L/SIL (ML)   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/24/54   | 34.6                  | 33.1               | 33.0                | 2.63                | 2.75                | 204               | ----       | ----            | 7/24/54                  | 37.1        | 31.3                  | 37.6                | 2.60                | 2.69                | 209               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 8/12/54   | 34.1                  | 30.5               | 32.7                | 2.59                | 2.53                | 204               | ----       | ----            | 8/12/54                  | 27.3        | 27.7                  | 37.2                | 1.91                | 2.38                | 300               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/2/54  | 37.8                  | 34.2               | 35.9                | 2.87                | 2.84                | 214               | 0.34       | ----            | 9/2/54                   | 32.0        | 34.2                  | 39.9                | 2.24                | 2.93                | 209               | 0.86               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 35.2                  | 34.1               | 34.0                | 2.68                | 2.83                | 139               | ----       | ----            | 9/24/54                  | 34.4        | 32.4                  | 33.7                | 2.41                | 2.79                | 216               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 10/14/54  | 34.1                  | 32.0               | 35.3                | 2.59                | 2.66                | 202               | ----       | ----            | 10/14/54                 | 29.8        | 29.4                  | 36.5                | 2.09                | 2.53                | 234               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 4/20/55   | 40.0                  | 37.5               | 41.7                | 3.04                | 3.12                | ----              | ----       | ----            | 4/20/55                  | 33.5        | 31.1                  | 38.0                | 2.34                | 2.67                | 202               | MT                 | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/12/55   | 40.8                  | 36.4               | 34.5                | 3.10                | 3.02                | 157               | 0.43       | ----            | 5/12/55                  | 34.7        | 28.5                  | 37.9                | 2.43                | 2.45                | 234               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 5/26/55   | 36.4                  | 32.6               | 33.7                | 2.77                | 2.71                | 116               | ----       | ----            |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Site 148, Winsor Co., Vt.   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| Sudbury SL/SIL (ML)   |                       |                    |                     |                     |                     |                   |            |                 |                          |             |                       |                     |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 7/24/54   | 42.3                  | 45.5               | 36.6                | 2.83                | 3.69                | 184               | ----       | ----            | 7/24/54                  | 53.9        | 39.6                  | 37.1                | 2.80                | 2.22                | 175               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 8/12/54   | 41.7                  | 46.1               | 41.7                | 2.79                | 3.73                | 164               | ----       | ----            | 8/12/54                  | 57.3        | 37.3                  | 26.7                | 2.98                | 2.09                | 213               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/2/54  | 51.9                  | 43.5               | 30.9                | 3.48                | 3.52                | 180               | ----       | ----            | 9/2/54                   | 54.7        | 38.9                  | 22.5                | 2.84                | 2.18                | 194               | ----               | ----       |                 |                          |                     |                     |                     |  |  |  |  |  |  |
| 9/24/54   | 50.0                  | 60.7               | 51.4                | 3.35                | 4.92                | 133               | ----       | ----            | 9/24/54                  | 59.1        | 36.5                  | 26.                 |                     |                     |                   |                    |            |                 |                          |                     |                     |                     |  |  |  |  |  |  |



Table B3b (Concluded)  
Northeastern Region (Continued)

| Sample<br>Date   | Soil Moisture Content   |                          |                           |                         |                          | Cone<br>Index | Remold-<br>ing<br>Index | Depth<br>to<br>Water<br>Table<br>in. | Sample<br>Date | Soil Moisture Content     |                         |                          |                           |      | Cone<br>Index | Remold-<br>ing<br>Index | Depth<br>to<br>Water<br>Table<br>in. |
|--|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------|-------------------------|--------------------------------------|----------------|---------------------------|-------------------------|--------------------------|---------------------------|------|---------------|-------------------------|--------------------------------------|
|  | Percent Weight Basis    |                          | in./5 in.                 |                         |                          |               |                         |                                      |                | Percent Weight Basis      |                         | in./5 in.                |                           |      |               |                         |                                      |
|  | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth |               |                         |                                      |                | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth |      |               |                         |                                      |
| Site 150, Mirar Co., Va.<br>Shelton Sil/L (CL)         |                         |                          |                           |                         |                          |               |                         |                                      |                |                           |                         |                          |                           |      |               |                         |                                      |
| 7/24/54  | 59.2                    | 70.7                     | 21.3                      | 3.52                    | 3.62                     | 136           | ----                    | ----                                 | 7/25/54        | 14.2                      | 25.6                    | 20.2                     | 1.05                      | 2.15 | 300           | ----                    | ----                                 |
| 8/12/54  | 51.6                    | 56.9                     | 23.1                      | 3.07                    | 2.96                     | 172           | ----                    | ----                                 | 5/12/55        | 37.0                      | 24.6                    | 20.1                     | 1.00                      | 2.07 | 300           | ----                    | ----                                 |
| 9/2/54   | 67.9                    | 66.3                     | 59.8                      | 4.03                    | 2.93                     | 177           | 0.35 +                  | ----                                 | 9/3/54         | 41.2                      | 34.8                    | 28.1                     | 3.05                      | 2.92 | 175           | ----                    | ----                                 |
| 9/24/54  | 50.3                    | 54.9                     | 46.5                      | 2.99                    | 1.95                     | 164           | ----                    | ----                                 | 9/25/54        | 40.9                      | 32.2                    | 26.1                     | 3.03                      | 2.70 | 133           | ----                    | ----                                 |
| 10/15/54   | 63.6                    | 60.8                     | 44.7                      | 3.75                    | 3.16                     | 301           | ----                    | ----                                 | 10/15/54       | 40.8                      | 32.9                    | 26.5                     | 3.02                      | 2.76 | 162           | 0.45                    | ----                                 |
| 4/14/55  | 52.1                    | 41.6                     | 35.6                      | 3.09                    | 2.16                     | 176           | ----                    | 3                                    | 4/14/55        | 43.7                      | 31.9                    | 25.4                     | 3.50                      | 2.68 | 149           | 0.33                    | ----                                 |
| 5/12/55  | 55.9                    | 59.3                     | 3.2                       | 3.91                    | 3.11                     | 166           | 0.60 +                  | 24                                   | 5/12/55        | 35.3                      | 33.7                    | 23.1                     | 2.55                      | 2.33 | 207           | ----                    | ----                                 |
| 5/26/55  | 56.5                    | 70.7                     | 73.1                      | 3.36                    | 3.58                     | 166           | ----                    | ----                                 | 5/26/55        | 32.2                      | 26.8                    | 21.3                     | 2.33                      | 2.25 | 264           | ----                    | ----                                 |
| Site 152, Saratoga Co., N. Y.<br>Finchess Sil/L (CL)   |                         |                          |                           |                         |                          |               |                         |                                      |                |                           |                         |                          |                           |      |               |                         |                                      |
| 7/25/54  | 26.2                    | 19.7                     | 21.2                      | 2.02                    | 1.73                     | 300           | ----                    | ----                                 | 7/25/54        | 7.5                       | 8.3                     | 29.7                     | 0.58                      | 0.77 | 300           | ----                    | ----                                 |
| 8/12/54  | 27.4                    | 20.3                     | 19.4                      | 2.11                    | 1.79                     | 300           | ----                    | ----                                 | 8/12/54        | 17.6                      | 11.9                    | 10.0                     | 1.37                      | 1.11 | 300           | ----                    | ----                                 |
| 9/3/54   | 29.2                    | 25.2                     | 22.0                      | 2.35                    | 2.22                     | 300           | ----                    | ----                                 | 9/3/54         | 23.4                      | 17.0                    | 12.3                     | 2.22                      | 1.58 | 254           | ----                    | ----                                 |
| 9/25/54  | 32.2                    | 23.0                     | 26.0                      | 2.43                    | 2.20                     | 300           | ----                    | ----                                 | 9/25/54        | 30.2                      | 21.3                    | 16.4                     | 2.36                      | 2.03 | 211           | ----                    | ----                                 |
| 10/15/54   | 25.9                    | 22.0                     | 24.7                      | 1.99                    | 1.94                     | 300           | NT                      | ----                                 | 10/15/54       | 33.6                      | 20.5                    | 15.7                     | 2.62                      | 1.91 | 232           | NT                      | ----                                 |
| 4/14/55  | 45.6                    | 28.6                     | 20.1                      | 3.59                    | 1.52                     | 201           | 0.59                    | 3                                    | 4/14/55        | 34.2                      | 23.6                    | 19.2                     | 2.67                      | 2.16 | 232           | 0.66                    | ----                                 |
| 5/12/55  | 42.5                    | 26.3                     | 21.0                      | 3.27                    | 1.31                     | 190           | 0.71                    | ----                                 | 5/12/55        | 24.5                      | 13.6                    | 15.6                     | 1.91                      | 1.73 | 203           | 0.71                    | ----                                 |
| 5/26/55  | 33.5                    | 22.5                     | 24.6                      | 2.53                    | 1.98                     | 293           | ----                    | ----                                 | 5/26/55        | 22.4                      | 13.9                    | 11.0                     | 1.75                      | 1.29 | 300           | ----                    | ----                                 |
| Site 154, Rensselaer Co., N. Y.<br>Colony Sil/L (CL)   |                         |                          |                           |                         |                          |               |                         |                                      |                |                           |                         |                          |                           |      |               |                         |                                      |
| 8/12/54  | 2.7                     | 17.2                     | 20.0                      | 1.77                    | 1.53                     | 121           | ----                    | ----                                 | 8/12/54        | 17.0                      | 15.2                    | 14.3                     | 1.31                      | 1.45 | 240           | ----                    | ----                                 |
| 9/3/54   | 27.3                    | 22.3                     | 25.6                      | 2.21                    | 2.05                     | 159           | NT                      | ----                                 | 9/3/54         | 19.8                      | 16.4                    | 18.0                     | 1.50                      | 1.51 | 238           | ----                    | ----                                 |
| 9/25/54  | 22.7                    | 20.3                     | 21.9                      | 1.34                    | 1.57                     | 147           | ----                    | ----                                 | 9/25/54        | 17.5                      | 16.0                    | 15.9                     | 1.35                      | 1.47 | 265           | ----                    | ----                                 |
| 10/15/54   | 22.3                    | 13.1                     | 22.8                      | 1.31                    | 1.67                     | 173           | ----                    | ----                                 | 10/15/54       | 40.7                      | 15.7                    | 15.7                     | 1.52                      | 1.44 | 227           | ----                    | ----                                 |
| 11/4/54  | 23.2                    | 23.1                     | 26.1                      | 1.58                    | 2.13                     | 120           | ----                    | ----                                 | 11/4/54        | 21.7                      | 19.0                    | 18.3                     | 1.67                      | 1.75 | 227           | NT                      | ----                                 |
| 4/14/55  | 26.5                    | 24.9                     | 25.3                      | 2.15                    | 2.28                     | 144           | 0.36                    | ----                                 | 4/14/55        | 23.1                      | 18.8                    | 18.5                     | 1.78                      | 1.73 | 177           | 1.71*                   | ----                                 |
| 5/12/55  | 23.4                    | 17.6                     | 22.6                      | 1.36                    | 1.62                     | 170           | 0.65                    | ----                                 | 5/12/55        | 22.0                      | 16.9                    | 19.0                     | 1.69                      | 1.55 | 208           | ----                    | ----                                 |
| 5/26/55  | 22.5                    | 17.4                     | 22.3                      | 1.32                    | 1.62                     | 128           | ----                    | ----                                 | 5/26/55        | 18.2                      | 14.9                    | 15.3                     | 1.40                      | 1.37 | 174           | ----                    | ----                                 |
| Site 156, Rensselaer Co., N. Y.<br>Atherton Sil/L (CL) |                         |                          |                           |                         |                          |               |                         |                                      |                |                           |                         |                          |                           |      |               |                         |                                      |
| 8/12/54  | 41.7                    | 26.5                     | 23.3                      | 2.83                    | 2.46                     | 146           | ----                    | ----                                 | 8/13/54        | 17.0                      | 12.1                    | 9.3                      | 1.12                      | 1.05 | 238           | ----                    | ----                                 |
| 9/3/54   | 44.3                    | 30.0                     | 23.5                      | 3.06                    | 2.79                     | 170           | 0.58                    | ----                                 | 9/3/54         | 27.2                      | 21.0                    | 17.5                     | 1.80                      | 1.83 | 231           | ----                    | ----                                 |
| 9/25/54  | 43.7                    | 29.2                     | 25.4                      | 3.02                    | 2.72                     | 157           | ----                    | ----                                 | 9/25/54        | 24.8                      | 18.6                    | 16.4                     | 1.64                      | 1.62 | 259           | ----                    | ----                                 |
| 10/15/54   | 43.9                    | 34.9                     | 23.3                      | 3.03                    | 2.25                     | 157           | ----                    | ----                                 | 10/15/54       | 23.7                      | 17.2                    | 12.1                     | 1.56                      | 1.50 | 274           | ----                    | ----                                 |
| 4/14/55  | 47.5                    | 32.4                     | 25.2                      | 3.28                    | 2.01                     | 139           | ----                    | ----                                 | 11/4/54        | 26.2                      | 22.1                    | 18.7                     | 1.73                      | 1.92 | 192           | 0.56                    | ----                                 |
| 4/14/55  | 57.5                    | 40.0                     | 25.4                      | 3.97                    | 3.72                     | 129           | 0.46                    | ----                                 | 4/14/55        | 27.0                      | 23.4                    | 20.0                     | 1.78                      | 2.03 | 147           | 0.38                    | ----                                 |
| 5/12/55  | 52.0                    | 32.2                     | 27.0                      | 3.59                    | 2.99                     | 120           | ----                    | ----                                 | 5/12/55        | 23.1                      | 20.1                    | 18.0                     | 1.95                      | 1.75 | 205           | ----                    | ----                                 |
| 5/26/55  | 48.9                    | 51.6                     | 24.5                      | 3.37                    | 2.94                     | 117           | ----                    | ----                                 | 5/27/55        | 25.3                      | 17.1                    | 16.3                     | 1.67                      | 1.49 | 208           | ----                    | ----                                 |
| Bulk density and moisture content values questionable  |                         |                          |                           |                         |                          |               |                         |                                      |                |                           |                         |                          |                           |      |               |                         |                                      |
| Site 157, Monroe Co., N. Y.<br>Brockport Sil/L (CL)    |                         |                          |                           |                         |                          |               |                         |                                      |                |                           |                         |                          |                           |      |               |                         |                                      |
| 7/4/54   | 27.0                    | 11.1                     | 15.0                      | 2.04                    | 1.19                     | 300           | ----                    | ----                                 | 7/4/54         | 27.0                      | 11.1                    | 15.0                     | 2.04                      | 1.19 | 300           | ----                    | ----                                 |
| 8/20/54  | 15.3                    | 12.8                     | 15.6                      | 1.13                    | 1.16                     | 300           | ----                    | ----                                 | 8/20/54        | 15.3                      | 12.8                    | 15.6                     | 1.13                      | 1.16 | 300           | ----                    | ----                                 |
| 9/10/54  | 18.1                    | 16.8                     | 10.6                      | 2.03                    | 1.53                     | 300           | ----                    | ----                                 | 9/10/54        | 18.1                      | 16.8                    | 10.6                     | 2.03                      | 1.53 | 300           | ----                    | ----                                 |
| 10/21/54   | 20.4                    | 24.2                     | 23.9                      | 2.40                    | 2.00                     | 232           | ----                    | ----                                 | 10/21/54       | 20.4                      | 24.2                    | 23.9                     | 2.40                      | 2.00 | 232           | ----                    | ----                                 |
| 11/5/54  | 31.1                    | 24.2                     | 23.9                      | 2.90                    | 2.20                     | 179           | 0.97                    | ----                                 | 11/5/54        | 31.1                      | 24.2                    | 23.9                     | 2.90                      | 2.20 | 179           | 0.97                    | ----                                 |
| 4/4/55   | 27.2                    | 21.4                     | 24.3                      | 2.75                    | 2.49                     | 152           | 0.81                    | 2                                    | 4/4/55         | 27.2                      | 21.4                    | 24.3                     | 2.75                      | 2.49 | 152           | 0.81                    | 2                                    |
| 4/21/55  | 21.7                    | 20.3                     | 23.5                      | 2.72                    | 2.30                     | 102           | ----                    | 8                                    | 4/21/55        | 21.7                      | 20.3                    | 23.5                     | 2.72                      | 2.30 | 102           | ----                    | 8                                    |
| 5/18/55  | 27.6                    | 20.7                     | 1.30                      | 1.67                    | 300                      | NT            | ----                    | ----                                 | 5/18/55        | 27.6                      | 20.7                    | 1.30                     | 1.67                      | 300  | NT            | ----                    | ----                                 |

Note NT = no test.

\* Vibrated remolding test.

\* Measurement of 0- to 6-in. layer.



Table B3c  
Soil Moisture Content and Strength Data of Survey Sites  
Lake States Region

| Sample<br>Date   | Soil Moisture Content |                 |                  |                  |                  | Penetration<br>Index | Depth<br>to<br>Water<br>Table<br>in. | Sample<br>Date | Soil Moisture Content |                 |                  |                  |                  | Penetration<br>Index | Depth<br>to<br>Water<br>Table<br>in. |
|--|-----------------------|-----------------|------------------|------------------|------------------|----------------------|--------------------------------------|----------------|-----------------------|-----------------|------------------|------------------|------------------|----------------------|--------------------------------------|
|  | Percent Weight Basis  |                 |                  |                  |                  |                      |                                      |                | Percent Weight Basis  |                 |                  |                  |                  |                      |                                      |
|  | 0- to<br>6-in.        | 6- to<br>12-in. | 12- to<br>18-in. | 18- to<br>24-in. | 24- to<br>30-in. |                      |                                      |                | 0- to<br>6-in.        | 6- to<br>12-in. | 12- to<br>18-in. | 18- to<br>24-in. | 24- to<br>30-in. |                      |                                      |
| Site 1, Marathon Co., Wis.<br>Glouster SIL/SIL (CL-ML) |                       |                 |                  |                  |                  |                      |                                      |                |                       |                 |                  |                  |                  |                      |                                      |
| 5/24/54  | 36.7                  | 31.0            | 28.3             | 2.77             | 2.50             | 283                  | ----                                 | 5/28/54        | 42.3                  | 23.5            | 25.2             | 3.32             | 2.76             | 125                  | ----                                 |
| 7/14/54  | 13.1                  | 14.0            | 15.3             | 1.06             | 1.12             | 300                  | ----                                 | 7/15/54        | 2.3                   | 7.1             | 3.1              | 0.77             | 0.66             | 300                  | ----                                 |
| 8/3/54   | 14.0                  | 10.2            | 17.2             | 1.13             | 0.86             | 300                  | ----                                 | 8/3/54         | 7.7                   | 7.4             | 0.5              | 0.60             | 0.63             | 215                  | ----                                 |
| 9/31/54  | 10.2                  | 5.4             | 10.1             | 0.83             | 0.45             | 300                  | ----                                 | 9/31/54        | 11.3                  | 5.7             | 6.7              | 0.73             | 0.64             | 233                  | ----                                 |
| 10/11/54   | 27.2                  | 20.6            | 22.5             | 2.20             | 1.73             | 271                  | 0.50                                 | 10/11/54       | 17.3                  | 12.0            | 10.3             | 1.52             | 1.03             | 202                  | NT                                   |
| 4/11/55  | 27.4                  | 17.3            | 17.3             | 2.22             | 1.02             | 267                  | 0.72                                 | 4/11/55        | 24.5                  | 20.4            | 25.5             | 1.73             | 1.71             | 174                  | 1.22*                                |
| 4/27/55  | 26.3                  | 20.2            | 20.0             | 2.13             | 1.70             | 283                  | NT                                   | 4/27/55        | 22.9                  | 17.7            | 23.7             | 1.96             | 1.65             | 165                  | 1.94*                                |
| 5/23/55  | 11.0                  | 12.6            | 15.6             | 0.83             | 1.06             | 300                  | NT                                   | 5/23/55        | 16.2                  | 9.0             | 7.6              | 1.27             | 0.76             | 122                  | ----                                 |
| Site 3, Portage Co., Wis.<br>Waukesha LS/S (SM)        |                       |                 |                  |                  |                  |                      |                                      |                |                       |                 |                  |                  |                  |                      |                                      |
| 5/28/54  | 23.8                  | 17.5            | 13.3             | 1.73             | 1.57             | 144                  | ----                                 | 5/28/54        | 31.7                  | 25.1            | 22.5             | 2.51             | 2.35             | 265                  | ----                                 |
| 7/14/54  | 7.6                   | 9.5             | 4.1              | 0.55             | 0.44             | 210                  | ----                                 | 7/15/54        | 9.5                   | 9.6             | 3.8              | 0.62             | 0.30             | 300                  | ----                                 |
| 8/3/54   | 14.3                  | 6.6             | 5.3              | 1.04             | 0.53             | 207                  | ----                                 | 8/3/54         | 10.2                  | 5.1             | 0.5              | 0.53             | 0.76             | 271                  | ----                                 |
| 9/31/54  | 11.7                  | 9.7             | 5.7              | 0.85             | 0.54             | 163                  | ----                                 | 9/31/54        | 11.2                  | 2.5             | 1.7              | 0.31             | 0.33             | 204                  | ----                                 |
| 10/11/54   | 16.3                  | 2.7             | 9.2              | 1.12             | 0.72             | 155                  | NT                                   | 10/11/54       | 14.7                  | 11.0            | 10.5             | 1.21             | 1.03             | 212                  | NT                                   |
| 4/11/55  | 14.5                  | 8.4             | 7.4              | 1.05             | 0.68             | 151                  | NT*                                  | 4/11/55        | 16.7                  | 10.3            | 13.6             | 1.37             | 1.02             | 150                  | NT*                                  |
| 4/27/55  | 15.5                  | 8.7             | 7.5              | 1.15             | 0.70             | 155                  | 2.40*                                | 4/27/55        | 13.3                  | 7.3             | 10.3             | 1.12             | 0.73             | 170                  | NT*                                  |
| 5/23/55  | 5.0                   | 4.4             | 4.7              | 0.48             | 0.35             | 204                  | ----                                 | 5/23/55        | 5.9                   | 5.6             | 7.7              | 0.42             | 0.80             | 134                  | ----                                 |
| Site 5, Portage Co., Wis.<br>Genesee LS/S (SM)         |                       |                 |                  |                  |                  |                      |                                      |                |                       |                 |                  |                  |                  |                      |                                      |
| 5/28/54  | 24.8                  | 17.5            | 15.6             | 1.80             | 1.73             | 213                  | ----                                 | 5/14/54        | 5.3                   | 3.2             | 4.1              | 0.47             | 0.31             | 253                  | ----                                 |
| 7/14/54  | 16.0                  | 16.4            | 12.9             | 1.26             | 1.46             | 238                  | ----                                 | 7/15/54        | 4.3                   | 3.3             | 3.8              | 0.38             | 0.32             | 300                  | ----                                 |
| 8/3/54   | 13.5                  | 11.7            | 12.6             | 1.35             | 1.04             | 261                  | ----                                 | 8/3/54         | 6.5                   | 2.3             | 2.2              | 0.55             | 0.23             | 300                  | ----                                 |
| 9/31/54  | 20.6                  | 12.1            | 14.7             | 1.50             | 1.64             | 157                  | ----                                 | 9/31/54        | 7.0                   | 5.2             | 2.5              | 0.62             | 0.71             | 300                  | ----                                 |
| 10/11/54   | 25.4                  | 20.3            | 14.2             | 1.84             | 1.80             | 133                  | 0.74                                 | 10/12/54       | 13.3                  | 10.1            | 7.5              | 1.22             | 0.70             | 205                  | NT                                   |
| 4/11/55  | 25.9                  | 12.6            | 15.1             | 1.57             | 1.74             | 180                  | 0.70                                 | 4/11/55        | 20.3                  | 15.7            | Frost            | 1.50             | 1.41             | 273                  | 1.30*                                |
| 4/27/55  | 26.1                  | 17.8            | 12.7             | 1.82             | 1.52             | 155                  | 0.79                                 | 4/27/55        | 3.0                   | 10.7            | 10.3             | 0.58             | 0.25             | 217                  | 1.26*                                |
| 5/23/55  | 12.9                  | 13.8            | 10.2             | 0.74             | 1.23             | 300                  | ----                                 | 5/23/55        | 4.2                   | 4.8             | 4.3              | 0.30             | 0.63             | 300                  | ----                                 |
| Site 7, Waushara Co., Wis.<br>Coloma LS/LS (SM)        |                       |                 |                  |                  |                  |                      |                                      |                |                       |                 |                  |                  |                  |                      |                                      |
| 5/14/54  | 7.2                   | 5.5             | 5.7              | 0.38             | 0.54             | 114                  | ----                                 | 5/14/54        | 3.0                   | 5.3             | 6.0              | 0.66             | 0.47             | 183                  | ----                                 |
| 7/14/54  | 5.0                   | 4.4             | 4.1              | 0.48             | 0.41             | 187                  | ----                                 | 7/15/54        | 7.5                   | 5.9             | 5.2              | 0.55             | 0.52             | 210                  | ----                                 |
| 8/3/54   | 6.6                   | 4.3             | 4.4              | 0.53             | 0.40             | 261                  | ----                                 | 8/3/54         | 7.4                   | 6.1             | 3.5              | 0.55             | 0.54             | 271                  | ----                                 |
| 9/31/54  | 3.7                   | 4.0             | 3.0              | 0.31             | 0.37             | 227                  | ----                                 | 9/31/54        | 6.3                   | 4.2             | 3.0              | 0.43             | 0.37             | 276                  | ----                                 |
| 10/12/54   | 14.1                  | 3.3             | 7.0              | 1.13             | 0.33             | 72                   | NT                                   | 10/12/54       | 17.4                  | 10.1            | 11.4             | 1.42             | 0.75             | 210                  | NT                                   |
| 4/11/55  | 14.0                  | 11.3            | 5.1              | 1.12             | 1.05             | 137                  | 1.3*                                 | 4/12/55        | 15.1                  | 5.7             | 2.3              | 1.40             | 0.86             | 153                  | 1.94*                                |
| 4/27/55  | 12.2                  | 3.0             | 7.8              | 0.92             | 0.74             | 117                  | 1.69*                                | 4/27/55        | 16.3                  | 5.5             | 7.2              | 0.17             | 0.75             | 135                  | 2.01*                                |
| 5/23/55  | 2.3                   | 4.6             | 5.5              | 0.51             | 0.43             | 123                  | ----                                 | 5/23/55        | 7.0                   | 5.5             | 5.3              | 0.51             | 0.42             | 140                  | ----                                 |
| Site 9, Waushara Co., Wis.<br>Waukesha LS/S (SM)       |                       |                 |                  |                  |                  |                      |                                      |                |                       |                 |                  |                  |                  |                      |                                      |
| 5/14/54  | 4.2                   | 5.1             | 4.4              | 0.34             | 0.50             | 300                  | ----                                 | 5/15/54        | 3.1                   | 5.2             | 7.3              | 0.27             | 0.58             | 300                  | ----                                 |
| 7/14/54  | 4.7                   | 6.0             | 7.0              | 0.37             | 0.55             | 300                  | ----                                 | 7/20/54        | 3.3                   | 5.2             | 6.0              | 0.34             | 0.58             | 300                  | ----                                 |
| 8/3/54   | 5.2                   | 5.6             | 5.3              | 0.65             | 0.62             | 300                  | ----                                 | 8/3/54         | 10.0                  | 11.7            | 13.8             | 0.58             | 1.10             | 300                  | ----                                 |
| 9/31/54  | 6.3                   | 5.5             | 4.7              | 0.54             | 0.52             | 300                  | ----                                 | 9/1/54         | 10.2                  | 10.2            | 12.0             | 0.70             | 0.25             | 300                  | ----                                 |
| 10/12/54   | 13.7                  | 10.4            | 10.3             | 1.11             | 0.38             | 180                  | NT                                   | 10/12/54       | 14.3                  | 14.3            | 14.5             | 1.31             | 1.40             | 232                  | NT                                   |
| 4/12/55  | 2.5                   | 7.3             | 1.06             | 0.84             | 1.65             | 165                  | NT*                                  | 4/12/55        | 14.5                  | 13.7            | 14.6             | 1.30             | 1.30             | 221                  | NT*                                  |
| 4/27/55  | 2.8                   | 3.2             | 5.3              | 0.78             | 0.87             | 132                  | 1.44*                                | 4/27/55        | 12.0                  | 14.6            | 0.55             | 1.13             | 250              | 1.36*                |                                      |
| 5/23/55  | 2.7                   | 2.6             | 3.7              | 0.22             | 0.24             | 300                  | ----                                 | 5/24/55        | 10.2                  | 7.2             | 8.5              | 0.20             | 0.68             | 300                  | ----                                 |
| Site 11, Columbia Co., Wis.<br>Miami SIL/SIL (CL-ML)   |                       |                 |                  |                  |                  |                      |                                      |                |                       |                 |                  |                  |                  |                      |                                      |
| 5/15/54  | 12.3                  | 13.2            | 17.0             | 0.1              | 1.08             | 300                  | ----                                 | 5/15/54        | 17.2                  | 15.2            | 15.6             | 1.50             | 1.35             | 146                  | ----                                 |
| 7/20/54  | 12.1                  | 13.7            | 13.2             | 0.74             | 1.14             | 300                  | ----                                 | 7/20/54        | 13.0                  | 12.7            | 14.5             | 1.04             | 1.13             | 160                  | ----                                 |
| 8/3/54   | 14.7                  | 14.5            | 14.3             | 1.10             | 1.13             | 300                  | ----                                 | 8/3/54         | 1.3                   | 16.7            | 17.4             | 1.51             | 1.47             | 113                  | ----                                 |
| 9/1/54   | 14.7                  | 11.5            | 13.6             | 0.95             | 0.97             | 300                  | ----                                 | 9/1/54         | 17.7                  | 14.3            | 15.6             | 1.35             | 1.27             | 135                  | ----                                 |
| 10/12/54   | 22.6                  | 22.6            | 21.2             | 1.92             | 1.36             | 211                  | 0.62                                 | 10/12/54       | 22.6                  | 17.0            | 20.1             | 1.72             | 1.56             | 95                   | 0.55                                 |
| 4/12/55  | 27.1                  | 21.9            | 22.9             | 2.00             | 1.80             | 161                  | 0.68                                 | 4/12/55        | 23.8                  | 16.8            | 16.6             | 1.51             | 1.49             | 92                   | 0.50                                 |
| 4/27/55  | 27.5                  | 23.2            | 23.2             | 2.03             | 1.70             | 183                  | 0.86                                 | 4/27/55        | 24.4                  | 17.7            | 13.5             | 1.56             | 1.57             | 100                  | 0.66                                 |
| 5/24/55  | 22.1                  | 21.5            | 20.5             | 1.53             | 1.77             | 272                  | ----                                 | 5/24/55        | 12.9                  | 12.0            | 13.3             | 1.43             | 1.07             | 130                  | ----                                 |
| Site 13, Columbia Co., Wis.<br>Carrington L/L (CL-ML)  |                       |                 |                  |                  |                  |                      |                                      |                |                       |                 |                  |                  |                  |                      |                                      |
| 5/15/54  | 10.7                  | 12.7            | 15.0             | 0.24             | 1.14             | 300                  | ----                                 | 5/15/54        | 27.5                  | 26.9            | 2.0              | 2.01             | 1.74             | 300                  | ----                                 |
| 7/20/54  | 11.2                  | 13.0            | 15.1             | 0.77             | 1.16             | 300                  | ----                                 | 7/20/54        | 24.2                  | 25.0            | 25.3             | 1.77             | 1.78             | 300                  | ----                                 |
| 8/3/54   | 17.7                  | 16.4            | 17.5             | 1.53             | 1.47             | 210                  | ----                                 | 8/3/54         | 25.3                  | 31.1            | 31.1             | 1.55             | 1.02             | 300                  | ----                                 |
| 9/1/54   | 15.2                  | 15.1            | 17.3             | 1.31             | 1.44             | 300                  | ----                                 | 9/1/54         | 23.2                  | 22.8            | 27.6             | 1.70             | 1.73             | 300                  | ----                                 |
| 10/12/54   | 12.1                  | 17.0            | 15.5             | 1.55             | 1.52             | 130                  | 0.63                                 | 10/12/54       | 33.3                  | 32.6            | 32.6             | 2.16             | 1.56             | 156                  | 0.50                                 |
| 4/12/55  | 13.7                  | 15.7            | 15.0             | 1.61             | 1.51             | 125                  | 0.37                                 | 4/12/55        | 30.7                  | 34.0            | 33.3             | 2.32             | 2.20             | 157                  | 0.75                                 |
| 4/27/55  | 17.4                  | 15.3            | 14.7             | 1.52             | 1.46             | 155                  | 0.53                                 | 4/27/55        | 27.5                  | 35.1            | 32.7             | 2.02             | 2.27             | 135                  | 0.72                                 |
| 5/24/55  | 1.4                   | 1.4             | 1.1              | 1.25             | 1.51             | 144                  | ----                                 | 5/24/55        | 30.7                  | 31.1            | 27.7             | 2.25             | 2.04             | 184                  | ----                                 |
| Site 14, Columbia Co., Wis.<br>Carrington SIL/SIL (CL) |                       |                 |                  |                  |                  |                      |                                      |                |                       |                 |                  |                  |                  |                      |                                      |
| 5/15/54  | 10.7                  | 12.7            | 15.0             | 0.24             | 1.14             | 300                  | ----                                 | 5/15/54        | 27.5                  | 26.9            | 2.0              | 2.01             | 1.74             | 300                  | ----                                 |
| 7/20/54  | 11.2                  | 13.0            | 15.1             | 0.77             | 1.16             | 300                  | ----                                 | 7/20/54        | 24.2                  | 25.0            | 25.3             | 1.77             | 1.78             | 300                  | ----                                 |
| 8/3/54   | 17.7                  | 16.4            | 17.5             | 1.53             | 1.47             | 210                  | ----                                 | 8/3/54         | 25.3                  | 31.1            | 31.1             | 1.55             | 1.02             | 300                  | ----                                 |
| 9/1/54   | 15.2                  | 15.1            | 17.3             | 1.31             | 1.44             | 300                  | ----                                 | 9/1/54         | 23.2                  | 22.8            | 27.6             | 1.70             | 1.73             | 300                  | ----                                 |
| 10/12/54   | 12.1                  | 17.0            | 15.5             | 1.55             | 1.52             | 130                  | 0.63                                 | 10/12/54       | 33.3                  | 32.6            | 32.6             | 2.16             | 1.56             | 156                  | 0.50                                 |
| 4/12/55  | 13.7                  | 15.7            | 15.0             | 1.61             | 1.51             | 125                  | 0.37                                 | 4/12/55        | 30.7                  | 34.0            | 33.3             | 2.32             | 2.20             | 157                  | 0.75                                 |
| 4/27/55  | 17.4                  | 15.3            | 14.7             | 1.52             | 1.46             | 155                  | 0.53                                 | 4/27/55        | 27.5                  | 35.1            | 32.7             | 2.02             | 2.27             | 135                  | 0.72                                 |
| 5/24/55  | 1.4                   | 1.4             | 1.1              | 1.25             | 1.51             | 144                  | ----                                 | 5/24/55        | 30.7                  | 31.1            | 27.7             | 2.25             | 2.04             | 184                  | ----                                 |

(Continued)

Note: NT = no test.  
\* Vibrated remolding test.



Lake States Reg. (Continued)

(Continued)

Note: NT = no test.  
\* Vibrated remolding test.



Table B3c (Continued)  
Lower States Region (Continued)

| Soil Moisture Content                              |                         |                          |                           |                         |                          |                           |                         |                          |                           | Core Index  | Remold-<br>ing Index    | Depth to<br>Water<br>Table<br>in. | Soil Moisture Content     |                         |                          |                           |                         |                          |                           |   |  |  | Core Index | Remold-<br>ing Index | Depth to<br>Water<br>Table<br>in. |  |  |  |  |
|--|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|---|-------------------------|-----------------------------------|---------------------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|---|--|--|------------|----------------------|-----------------------------------|--|--|--|--|
| Percent Weight Basis                               |                         |                          |                           |                         | In./6 in.                |                           |                         |                          |                           |   |                         |                                   | Percent Weight Basis      |                         |                          |                           |                         | In./6 in.                |                           |   |  |  |            |                      |                                   |  |  |  |  |
| Sample<br>Date                                     | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | Sample<br>Date                                    | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth          | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth |   |  |  |            |                      |                                   |  |  |  |  |
| Site 30, Henry Co., Ill.<br>Hagener S/S (SM)       |                         |                          |                           |                         |                          |                           |                         |                          |                           |   |                         |                                   |                           |                         |                          |                           |                         |                          |                           | Site 31, Jackson Co., Iowa<br>Muscatine S/S/Si (CL) |  |  |            |                      |                                   |  |  |  |  |
| 6/17/54  | 3.3                     | 3.7                      | 5.0                       | 0.35                    | 0.35                     | 300                       | ----                    |                          |                           | 6/17/54   | 28.4                    | 24.6                              | 27.1                      | 2.06                    | 2.04                     | 131                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 7/21/54  | 13.6                    | 9.1                      | 4.4                       | 1.24                    | 0.37                     | 291                       | ----                    |                          |                           | 7/21/54   | 28.4                    | 19.7                              | 22.2                      | 2.06                    | 1.63                     | 277                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 8/11/54  | 26.2                    | 22.6                     | 15.5                      | 2.33                    | 2.16                     | 251                       | ----                    |                          |                           | 8/11/54   | 29.7                    | 17.0                              | 14.0                      | 2.16                    | 1.48                     | 233                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 9/10/54  | 6.4                     | 6.0                      | 7.0                       | 0.55                    | 0.57                     | 300                       | ----                    |                          |                           | 9/10/54   | 14.7                    | 23.3                              | 9.0                       | 1.07                    | 1.37                     | 143                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 10/14/54   | 12.9                    | 5.5                      | 3.5                       | 1.13                    | 0.34                     | 250                       | NT                      |                          |                           | 10/14/54  | 31.2                    | 25.5                              | 29.2                      | 2.26                    | 2.11                     | 165                       | 0.6                     |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 3/30/55  | 11.6                    | 3.9                      | 11.4                      | 1.26                    | 0.34                     | 269                       | 1.37*                   |                          |                           | 3/31/55   | Soil frozen             |                                   |                           |                         |                          |                           |                         |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 4/23/55  | 11.1                    | 3.2                      | 5.4                       | 1.01                    | 0.73                     | 278                       | 1.52*                   |                          |                           | 4/25/55   | 34.5                    | 27.3                              | 26.3                      | 2.50                    | 2.46                     | *62                       | 0.42                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 5/25/55  | 5.1                     | 4.1                      | 4.3                       | 0.62                    | 0.39                     | 275                       | ----                    |                          |                           | 5/25/55   | 30.3                    | 24.4                              | 26.7                      | 2.19                    | 2.02                     | 199                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| Site 32, Jackson Co., Iowa<br>Clinton S/S/Si (CL)  |                         |                          |                           |                         |                          |                           |                         |                          |                           | Site 33, Jackson Co., Iowa<br>Geneseo S/S/Si (CL) |                         |                                   |                           |                         |                          |                           |                         |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 6/17/54  | 22.3                    | 21.3                     | 13.2                      | 1.30                    | 1.69                     | 213                       | ----                    |                          |                           | 6/17/54   | 26.2                    | 26.3                              | 24.8                      | 2.20                    | 2.27                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 7/21/54  | 12.8                    | 9.9                      | 12.5                      | 1.37                    | 0.77                     | 300                       | ----                    |                          |                           | 7/21/54   | 19.8                    | 20.7                              | 22.2                      | 1.66                    | 1.79                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 8/11/54  | 17.5                    | 13.7                     | 13.1                      | 1.39                    | 0.73                     | 300                       | ----                    |                          |                           | 8/11/54   | 19.2                    | 21.7                              | 23.0                      | 1.61                    | 1.87                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 9/10/54  | 19.6                    | 15.7                     | 17.4                      | 1.55                    | 1.22                     | 300                       | ----                    |                          |                           | 9/10/54   | 25.8                    | 25.9                              | 26.8                      | 2.47                    | 2.24                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 10/14/54   | 28.2                    | 25.6                     | 23.4                      | 2.23                    | 1.32                     | 114                       | 0.34                    |                          |                           | 10/15/54  | 31.6                    | 28.2                              | 29.7                      | 2.65                    | 2.44                     | 164                       | 0.78                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 3/21/55  | 27.2                    | 28.7                     | 22.3                      | 2.21                    | 2.24                     | 257                       | 0.62                    |                          |                           | 3/30/55   | 26.7                    | 30.1                              | 29.4                      | 2.24                    | 2.60                     | 161                       | 0.67                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 4/23/55  | 28.2                    | 27.0                     | 24.2                      | 2.23                    | 2.09                     | 204                       | 0.68                    |                          |                           | 4/30/55   | 28.1                    | 29.8                              | 28.4                      | 2.41                    | 2.57                     | 137                       | NT                      |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 5/25/55  | 20.9                    | 15.2                     | 16.7                      | 1.66                    | 1.18                     | 293                       | ----                    |                          |                           | 5/25/55   | 23.5                    | 24.6                              | 24.6                      | 1.97                    | 2.12                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| Site 36, Jackson Co., Iowa<br>Jackson S/S (SM)     |                         |                          |                           |                         |                          |                           |                         |                          |                           | Site 37, Jackson Co., Iowa<br>Clinton S/S/Si (CL) |                         |                                   |                           |                         |                          |                           |                         |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 6/17/54  | 9.7                     | 7.8                      | 8.5                       | 0.84                    | 0.75                     | 300                       | ----                    |                          |                           | 6/17/54   | 23.1                    | 34.6                              | 41.3                      | 1.86                    | 2.78                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 7/21/54  | 12.9                    | 5.4                      | 7.0                       | 1.12                    | 0.52                     | 300                       | ----                    |                          |                           | 7/21/54   | 26.6                    | 27.4                              | 35.7                      | 2.14                    | 2.20                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 8/11/54  | 9.0                     | 5.5                      | 6.2                       | 0.78                    | 0.32                     | 300                       | ----                    |                          |                           | 8/11/54   | 21.0                    | 25.6                              | 30.1                      | 1.69                    | 2.05                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 9/10/54  | 16.5                    | 8.9                      | 9.3                       | 1.44                    | 0.86                     | 300                       | ----                    |                          |                           | 9/10/54   | 26.6                    | 36.8                              | 45.3                      | 2.14                    | 2.36                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 10/15/54   | 16.6                    | 13.0                     | 11.3                      | 1.44                    | 1.25                     | 198                       | 0.79                    |                          |                           | 10/15/54  | 32.2                    | 39.3                              | 39.4                      | 2.52                    | 2.36                     | 177                       | 0.92                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 3/30/55  | 13.9                    | 12.9                     | 11.3                      | 1.21                    | 1.24                     | 211                       | NT                      |                          |                           | 3/30/55   | 36.0                    | 44.4                              | 44.4                      | 2.89                    | 3.30                     | 111                       | 0.78                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 4/30/55  | 11.8                    | 11.9                     | 10.1                      | 1.03                    | 1.04                     | 264                       | NT                      |                          |                           | 4/30/55   | 26.6                    | 34.5                              | 43.7                      | 2.14                    | 2.77                     | 144                       | 0.84                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 5/25/55  | 5.2                     | 6.4                      | 7.3                       | 0.45                    | 0.61                     | 300                       | ----                    |                          |                           | 5/25/55   | 17.3                    | 24.8                              | 3.1                       | 1.39                    | 1.99                     | 150                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| Site 38, Grant Co., Wis.<br>Fayette S/S/Si (CL)    |                         |                          |                           |                         |                          |                           |                         |                          |                           | Site 39, Grant Co., Wis.<br>Dubuque S/S/Si (CL)   |                         |                                   |                           |                         |                          |                           |                         |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 6/18/54  | 19.4                    | 21.3                     | 24.2                      | 1.61                    | 1.53                     | 300                       | ----                    |                          |                           | 6/18/54   | 23.6                    | 23.9                              | 21.3                      | 1.90                    | 1.85                     | 260                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 7/22/54  | 18.4                    | 19.5                     | 22.6                      | 1.52                    | 1.40                     | 300                       | ----                    |                          |                           | 7/22/54   | 15.6                    | 19.4                              | 21.3                      | 1.25                    | 1.57                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 8/11/54  | 11.8                    | 13.3                     | 19.2                      | 0.98                    | 0.96                     | 300                       | ----                    |                          |                           | 8/11/54   | 8.8                     | 13.7                              | 16.1                      | 0.71                    | 1.11                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 9/10/54  | 16.7                    | 14.0                     | 16.2                      | 1.38                    | 1.01                     | 300                       | ----                    |                          |                           | 9/10/54   | 14.4                    | 12.1                              | 14.1                      | 1.56                    | 0.98                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 10/15/54   | 27.5                    | 28.5                     | 27.5                      | 2.28                    | 2.05                     | 160                       | 0.78                    |                          |                           | 10/15/54  | 27.1                    | 28.7                              | 24.8                      | 2.18                    | 2.32                     | 168                       | 0.82                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 4/13/55  | 28.7                    | 28.8                     | 29.0                      | 2.38                    | 2.07                     | 107                       | 0.72                    |                          |                           | 4/13/55   | 27.8                    | 25.0                              | 24.6                      | 2.24                    | 2.03                     | 121                       | 0.90                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 4/30/55  | 27.7                    | 28.5                     | 27.3                      | 2.29                    | 2.05                     | 147                       | 0.76                    |                          |                           | 4/30/55   | 27.2                    | 24.9                              | 24.1                      | 2.19                    | 2.02                     | 157                       | 0.72                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 5/26/55  | 17.1                    | 19.2                     | 22.0                      | 1.42                    | 1.38                     | 300                       | ----                    |                          |                           | 5/26/55   | 22.5                    | 21.9                              | 22.5                      | 1.81                    | 1.77                     | 210                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| Site 40, Grant Co., Wis.<br>Dodgeville S/S/Si (CL) |                         |                          |                           |                         |                          |                           |                         |                          |                           | Site 41, Vernon Co., Wis.<br>Clinton S/S/Si (CL)  |                         |                                   |                           |                         |                          |                           |                         |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 6/18/54  | 23.3                    | 21.8                     | 22.4                      | 1.86                    | 1.48                     | 266                       | ----                    |                          |                           | 6/18/54   | 21.3                    | 17.0                              | 25.8                      | 1.72                    | 1.31                     | 294                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 7/22/54  | 17.1                    | 20.0                     | 22.4                      | 1.36                    | 1.36                     | 300                       | ----                    |                          |                           | 7/22/54   | 22.5                    | 25.0                              | 28.4                      | 1.82                    | 1.34                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 8/12/54  | 14.0                    | 17.7                     | 20.1                      | 1.12                    | 1.20                     | 300                       | ----                    |                          |                           | 8/11/54   | 20.1                    | 22.0                              | 29.3                      | 1.63                    | 1.70                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 9/10/54  | 17.6                    | 15.3                     | 18.1                      | 1.40                    | 1.07                     | 300                       | ----                    |                          |                           | 9/11/54   | 20.8                    | 25.7                              | 27.5                      | 1.68                    | 2.13                     | 224                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 10/15/54   | 27.1                    | 26.7                     | 26.8                      | 2.16                    | 1.82                     | 166                       | 0.86                    |                          |                           | 10/15/54  | 32.0                    | 30.4                              | 36.6                      | 2.59                    | 2.46                     | 127                       | 0.85                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 4/13/55  | 27.1                    | 27.9                     | 26.1                      | 2.30                    | 1.69                     | 155                       | 0.84                    |                          |                           | 4/16/55   | 32.2                    | 29.9                              | 31.9                      | 2.61                    | 2.42                     | 166                       | 0.80                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 4/30/55  | 26.1                    | 24.4                     | 24.3                      | 1.32                    | 1.63                     | 182                       | 0.88                    |                          |                           | 4/30/55   | 26.3                    | 26.3                              | 29.7                      | 2.18                    | 2.14                     | 211                       | NT                      |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 5/26/55  | 25.3                    | 26.0                     | 24.7                      | 2.02                    | 1.77                     | 155                       | ----                    |                          |                           | 5/26/55   | 32.0                    | 28.9                              | 31.0                      | 2.59                    | 2.34                     | 151                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| Site 42, Vernon Co., Wis.<br>Dubuque S/S/Si (CL)   |                         |                          |                           |                         |                          |                           |                         |                          |                           | Site 43, Vernon Co., Wis.<br>Dubuque S/S/Si (CL)  |                         |                                   |                           |                         |                          |                           |                         |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 6/13/54  | 25.2                    | 24.0                     | 23.7                      | 1.95                    | 1.86                     | 300                       | ----                    |                          |                           | 6/18/54   | 20.7                    | 19.2                              | 20.2                      | 1.50                    | 1.44                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 7/22/54  | 23.2                    | 24.3                     | 24.1                      | 1.80                    | 1.88                     | 300                       | ----                    |                          |                           | 7/22/54   | 20.8                    | 22.2                              | 21.5                      | 1.52                    | 1.52                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 8/12/54  | 19.6                    | 18.5                     | 19.9                      | 1.52                    | 1.43                     | 300                       | ----                    |                          |                           | 8/12/54   | 17.6                    | 13.8                              | 18.5                      | 0.96                    | 1.01                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 9/11/54  | 27.8                    | 19.3                     | 17.5                      | 2.15                    | 1.49                     | 300                       | ----                    |                          |                           | 9/11/54   | 20.2                    | 15.9                              | 18.1                      | 1.54                    | 1.10                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 10/16/54   | 33.3                    | 29.9                     | 29.4                      | 2.58                    | 2.31                     | 188                       | 0.66                    |                          |                           | 10/17/54  | 31.0                    | 31.3                              | 26.5                      | 2.36                    | 2.25                     | 201                       | 0.73                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| Site graded  |                         |                          |                           |                         |                          |                           |                         |                          |                           | 4/13/55   | 31.0                    | 30.7                              | 25.3                      | 2.47                    | 2.39                     | 203                       | 0.34                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
|  |                         |                          |                           |                         |                          |                           |                         |                          |                           | 4/30/55   | 27.6                    | 25.2                              | 23.0                      | 2.14                    | 1.95                     | 300                       | NT                      |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
|  |                         |                          |                           |                         |                          |                           |                         |                          |                           | 5/26/55   | 22.7                    | 21.7                              | 20.9                      | 1.76                    | 1.68                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| Site 44, Jackson Co., Wis.<br>Dodgeville S/S (SM)  |                         |                          |                           |                         |                          |                           |                         |                          |                           | Site 45, Jackson Co., Wis.<br>Plainfield S/S (SM) |                         |                                   |                           |                         |                          |                           |                         |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 6/19/54  | 15.5                    | 9.5                      | 8.9                       | 1.15                    | 0.87                     | 72                        | ----                    |                          |                           | 6/19/54   | 14.5                    | 8.3                               | 8.7                       | 1.25                    | 0.75                     | 103                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 7/22/54  | 6.3                     | 5.3                      | 6.1                       | 0.48                    | 0.48                     | 102                       | ----                    |                          |                           | 7/22/54   | 5.7                     | 6.5                               | 4.5                       | 0.32                    | 0.50                     | 300                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 8/12/54  | 6.7                     | 4.8                      | 3.0                       | 0.50                    | 0.44                     | 118                       | ----                    |                          |                           | 8/12/54   | 6.3                     | 4.0                               | 3.0                       | 0.34                    | 0.36                     | 201                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 9/11/54  | 9.8                     | 6.4                      | 4.3                       | 0.72                    | 0.58                     | 82                        | ----                    |                          |                           | 9/11/54   | 8.0                     | 5.7                               | 5.5                       | 0.69                    | 0.52                     | 169                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 10/16/54   | 11.0                    | 8.2                      | 6.7                       | 0.82                    | 0.75                     | 94                        | NT                      |                          |                           | 10/16/54  | 7.4                     | 6.7                               | 11.6                      | 0.64                    | 0.61                     | 121                       | NT                      |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 4/14/55  | 15.3                    | 9.6                      | 8.7                       | 1.14                    | 0.88                     | 38                        | 1.61*                   |                          |                           | 4/14/55   | 10.5                    | 7.6                               | 7.6                       | 0.91                    | 0.59                     | 129                       | 1.79*                   |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 4/30/55  | 9.7                     | 5.5                      | 5.6                       | 0.72                    | 0.59                     | 119                       | 2.03*                   |                          |                           | 4/30/55   | 9.5                     | 6.0                               | 5.7                       | 0.82                    | 0.54                     | 138                       | 1.56*                   |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |
| 5/26/55  | 12.1                    | 6.7                      | 6.0                       | 0.90                    | 0.61                     | 30                        | ----                    |                          |                           | 5/26/55   | 10.0                    | 5.2                               | 5.7                       | 0.78                    | 0.47                     | 127                       | ----                    |                          |                           |   |  |  |            |                      |                                   |  |  |  |  |

(continued)

Note: NT = no test.  
\* Vibrated remolding test.



Table B3c (Continued)  
Lake States Region (Continued)

| Sample Date                    | Soil Moisture Content |                       |                        |                        |                        | Cone Index | Remold-<br>ing Index | Depth to<br>Water Table<br>in. | Sample Date | Soil Moisture Content |                       |                        |                        |                        | Cone Index | Remold-<br>ing Index | Depth to<br>Water Table<br>in. |
|--------------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------|----------------------|--------------------------------|-------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------|----------------------|--------------------------------|
|                                | Percent Weight Basis  |                       |                        |                        |                        |            |                      |                                |             | Percent Weight Basis  |                       |                        |                        |                        |            |                      |                                |
|                                | 0- to 6-in.<br>Depth  | 6- to 12-in.<br>Depth | 12- to 18-in.<br>Depth | 18- to 24-in.<br>Depth | 24- to 30-in.<br>Depth |            |                      |                                |             | 0- to 6-in.<br>Depth  | 6- to 12-in.<br>Depth | 12- to 18-in.<br>Depth | 18- to 24-in.<br>Depth | 24- to 30-in.<br>Depth |            |                      |                                |
| Site 45, Jackson Co., Wis.     |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Union SIL/SIL (CL-M)           |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| 6/13/54                        | 32.2                  | 26.2                  | 26.3                   | 2.55                   | 2.13                   | 157        | ----                 |                                | 6/13/54     | 21.0                  | 19.1                  | 17.3                   | 1.34                   | 1.51                   | 37         | ----                 |                                |
| 7/22/54                        | 15.3                  | 13.2                  | 21.7                   | 1.15                   | 1.60                   | 300        | ----                 |                                | 7/22/54     | 10.6                  | 10.8                  | 12.3                   | 0.98                   | 1.02                   | 285        | ----                 |                                |
| 8/12/54                        | 11.2                  | 12.7                  | 13.4                   | 0.87                   | 1.06                   | 300        | ----                 |                                | 8/12/54     | 7.6                   | 8.2                   | 9.3                    | 0.70                   | 0.78                   | 330        | ----                 |                                |
| 9/11/54                        | 24.3                  | 20.6                  | 13.4                   | 1.32                   | 1.72                   | 300        | ----                 |                                | 9/11/54     | 16.0                  | 13.7                  | 11.3                   | 1.42                   | 1.30                   | 188        | ----                 |                                |
| 10/16/54                       | 31.4                  | 24.0                  | 24.9                   | 2.43                   | 2.00                   | 152        | 0.64                 |                                | 10/16/54    | 17.0                  | 14.9                  | 15.2                   | 1.57                   | 1.41                   | 125        | 0.66                 |                                |
| 4/14/55                        | 33.6                  | 23.1                  | 26.3                   | 2.60                   | 2.34                   | 95         | 0.67                 |                                | 4/14/55     | 19.0                  | 15.9                  | 16.0                   | 1.76                   | 1.51                   | 101        | 0.54                 |                                |
| 4/30/55                        | 26.6                  | 21.3                  | 24.4                   | 2.06                   | 1.78                   | 273        | NT                   |                                | 4/30/55     | 10.7                  | 12.4                  | 11.3                   | 0.99                   | 1.19                   | 209        | NT                   |                                |
| 5/26/55                        | 24.4                  | 16.6                  | 20.2                   | 1.39                   | 1.33                   | 264        | ----                 |                                | 5/26/55     | 16.5                  | 12.1                  | 8.4                    | 1.52                   | 1.15                   | 239        | ----                 |                                |
| Site 46, Jackson Co., Wis.     |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Boone SIL/SIL (CL-M)           |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| 6/19/54                        | 23.8                  | 31.6                  | 34.1                   | 2.46                   | 2.41                   | 152        | ----                 |                                | 6/19/54     | 21.7                  | 16.3                  | 14.1                   | 1.73                   | 1.45                   | 205        | ----                 |                                |
| 7/22/54                        | 18.4                  | 24.3                  | 26.0                   | 1.53                   | 1.35                   | 300        | ----                 |                                | 7/22/54     | 10.9                  | 14.4                  | 14.0                   | 0.90                   | 1.20                   | 187        | ----                 |                                |
| 8/12/54                        | 17.9                  | 20.1                  | 21.1                   | 1.49                   | 1.53                   | 300        | ----                 |                                | 8/12/54     | 6.9                   | 7.5                   | 8.2                    | 0.57                   | 0.66                   | 300        | ----                 |                                |
| 9/11/54                        | 23.0                  | 24.0                  | 25.2                   | 1.32                   | 1.33                   | 278        | ----                 |                                | 9/11/54     | 15.9                  | 11.7                  | 9.7                    | 1.35                   | 1.02                   | 300        | ----                 |                                |
| 10/16/54                       | 13.8                  | 27.2                  | 30.0                   | 1.57                   | 2.07                   | 197        | 0.77                 |                                | 10/16/54    | 20.5                  | 18.8                  | 17.1                   | 1.68                   | 1.65                   | 152        | 0.50                 |                                |
| 4/14/55                        | 24.6                  | 32.5                  | 11.0                   | 2.05                   | 2.48                   | 122        | 0.73                 |                                | 4/14/55     | 24.1                  | 19.2                  | 14.7                   | 1.76                   | 1.58                   | 144        | 0.53                 |                                |
| 4/30/55                        | 17.0                  | 27.7                  | 28.6                   | 1.42                   | 2.11                   | 207        | NT                   |                                | 4/30/55     | 18.5                  | 14.9                  | 14.1                   | 1.52                   | 1.33                   | 242        | NT                   |                                |
| 5/26/55                        | 13.6                  | 25.7                  | 27.3                   | 1.55                   | 1.96                   | 223        | ----                 |                                | 5/26/55     | 14.6                  | 13.4                  | 21.2                   | 1.30                   | 1.77                   | 274        | ----                 |                                |
| Site 48, Jackson Co., Wis.     |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Boone SIL/SIL (CL-M)           |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| 6/19/54                        | 23.8                  | 31.6                  | 34.1                   | 2.46                   | 2.41                   | 152        | ----                 |                                | 6/19/54     | 21.7                  | 16.3                  | 14.1                   | 1.73                   | 1.45                   | 205        | ----                 |                                |
| 7/22/54                        | 18.4                  | 24.3                  | 26.0                   | 1.53                   | 1.35                   | 300        | ----                 |                                | 7/22/54     | 10.9                  | 14.4                  | 14.0                   | 0.90                   | 1.20                   | 187        | ----                 |                                |
| 8/12/54                        | 17.9                  | 20.1                  | 21.1                   | 1.49                   | 1.53                   | 300        | ----                 |                                | 8/12/54     | 6.9                   | 7.5                   | 8.2                    | 0.57                   | 0.66                   | 300        | ----                 |                                |
| 9/11/54                        | 23.0                  | 24.0                  | 25.2                   | 1.32                   | 1.33                   | 278        | ----                 |                                | 9/11/54     | 15.9                  | 11.7                  | 9.7                    | 1.35                   | 1.02                   | 300        | ----                 |                                |
| 10/16/54                       | 13.8                  | 27.2                  | 30.0                   | 1.57                   | 2.07                   | 197        | 0.77                 |                                | 10/16/54    | 20.5                  | 18.8                  | 17.1                   | 1.68                   | 1.65                   | 152        | 0.50                 |                                |
| 4/14/55                        | 24.6                  | 32.5                  | 11.0                   | 2.05                   | 2.48                   | 122        | 0.73                 |                                | 4/14/55     | 24.1                  | 19.2                  | 14.7                   | 1.76                   | 1.58                   | 144        | 0.53                 |                                |
| 4/30/55                        | 17.0                  | 27.7                  | 28.6                   | 1.42                   | 2.11                   | 207        | NT                   |                                | 4/30/55     | 18.5                  | 14.9                  | 14.1                   | 1.52                   | 1.33                   | 242        | NT                   |                                |
| 5/26/55                        | 13.6                  | 25.7                  | 27.3                   | 1.55                   | 1.96                   | 223        | ----                 |                                | 5/26/55     | 14.6                  | 13.4                  | 21.2                   | 1.30                   | 1.77                   | 274        | ----                 |                                |
| Site 50, Jackson Co., Wis.     |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Union SIL/SIL (CL-M)           |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| 6/19/54                        | 30.7                  | 23.9                  | 21.5                   | 2.52                   | 2.05                   | 137        | ----                 |                                | 6/19/54     | 33.1                  | 28.3                  | 22.1                   | 2.22                   | 2.08                   | 266        | ----                 |                                |
| 7/22/54                        | 13.0                  | 17.3                  | 19.2                   | 1.12                   | 1.54                   | 300        | ----                 |                                | 7/22/54     | 30.6                  | 27.3                  | 19.8                   | 2.05                   | 2.00                   | 300        | ----                 |                                |
| 8/12/54                        | 6.4                   | 11.3                  | 17.3                   | 0.77                   | 0.97                   | 300        | ----                 |                                | 8/12/54     | 20.3                  | 20.8                  | 18.2                   | 1.35                   | 1.52                   | 300        | ----                 |                                |
| 9/11/54                        | 20.0                  | 14.2                  | 17.3                   | 1.64                   | 1.72                   | 300        | ----                 |                                | 9/11/54     | 38.4                  | 32.3                  | 29.1                   | 2.53                   | 2.36                   | 182        | 0.52                 |                                |
| 10/16/54                       | 28.2                  | 21.7                  | 21.6                   | 2.32                   | 1.57                   | 204        | 0.73                 |                                | 10/16/54    | 39.7                  | 30.0                  | 26.7                   | 2.87                   | 2.20                   | 187        | 0.58                 |                                |
| 4/14/55                        | 29.7                  | 22.3                  | 21.1                   | 2.74                   | 1.91                   | 174        | 0.36                 |                                | 4/14/55     | 34.8                  | 31.4                  | 23.9                   | 2.34                   | 2.30                   | 234        | 0.77                 |                                |
| 4/30/55                        | 23.2                  | 18.3                  | 19.2                   | 1.91                   | 1.57                   | 277        | ----                 |                                | 4/30/55     | 33.3                  | 24.0                  | 23.6                   | 2.27                   | 1.76                   | 300        | ----                 |                                |
| 5/26/55                        | 20.5                  | 14.7                  | 17.3                   | 1.69                   | 1.26                   | 300        | ----                 |                                | 5/26/55     |                       |                       |                        |                        |                        |            |                      |                                |
| Site 52, Marathon Co., Wis.    |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Spencer SIL/SIL (CL)           |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| 6/20/54                        | Heavy rains flooded   |                       |                        |                        |                        | 71         | ----                 |                                | 6/20/54     | 30.1                  | 28.4                  | 23.8                   | 2.31                   | 2.27                   | 193        | ----                 |                                |
| 7/23/54                        | 33.6                  | 30.8                  | 27.4                   | 2.42                   | 2.35                   | 188        | ----                 |                                | 7/23/54     | 24.7                  | 17.1                  | 14.5                   | 1.90                   | 1.36                   | 300        | ----                 |                                |
| 8/13/54                        | 23.4                  | 24.8                  | 22.5                   | 2.12                   | 1.89                   | 300        | ----                 |                                | 8/13/54     | 26.6                  | 19.3                  | 16.1                   | 2.04                   | 1.54                   | 300        | ----                 |                                |
| 10/16/54                       | Free water            |                       |                        |                        |                        | 92         | 0.68                 | Flooded                        | 10/16/54    | 26.9                  | 24.5                  | 19.3                   | 2.07                   | 1.55                   | 182        | 0.31                 |                                |
| 4/15/55                        | Flooded               |                       |                        |                        |                        |            |                      | Flooded                        | 4/15/55     | 34.1                  | 34.5                  | 27.7                   | 2.77                   | 2.75                   | 130        | 0.27                 |                                |
| 5/1/55                         | 51.7                  | 28.9                  | -----                  | 3.72                   | 2.20                   | 116        | 0.42                 |                                | 5/1/55      | 31.8                  | 27.7                  | 21.6                   | 2.44                   | 2.44                   | 211        | 0.40                 |                                |
| Area burned over before 4/1/55 |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Site 54, Price Co., Wis.       |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Gloucester SIL/SIL (SH)        |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| 6/20/54                        | 28.4                  | 23.9                  | 21.5                   | 1.67                   | 1.72                   | 109        | ----                 |                                | 6/20/54     | 40.9                  | 37.0                  | 21.0                   | 2.24                   | 2.12                   | 220        | ----                 |                                |
| 7/23/54                        | 26.7                  | 23.3                  | 18.7                   | 1.57                   | 1.57                   | 166        | ----                 |                                | 7/23/54     | 23.8                  | 22.0                  | 23.1                   | 1.16                   | 1.71                   | 300        | ----                 |                                |
| 8/13/54                        | 19.8                  | -----                 | 19.9                   | 1.16                   | -----                  | 24         | ----                 |                                | 8/13/54     | 28.8                  | 27.4                  | 21.2                   | 2.09                   | 2.07                   | 196        | ----                 |                                |
| 9/27/54                        | 26.5                  | 23.3                  | 17.5                   | 1.56                   | 1.63                   | 154        | 2.07                 |                                | 9/27/54     | 27.2                  | 24.4                  | 19.5                   | 2.03                   | 1.82                   | 136        | 0.57                 |                                |
| 4/15/55                        | 31.3                  | 20.9                  | 19.0                   | 1.84                   | 1.50                   | 176        | NT                   |                                | 4/15/55     | 35.9                  | 35.0                  | 33.3                   | 2.61                   | 2.67                   | 113        | 0.42                 |                                |
| 5/1/55                         | 27.6                  | 22.4                  | 17.7                   | 1.62                   | 1.61                   | 176        | 3.56*                |                                | 5/1/55      | 32.1                  | 31.3                  | 27.9                   | 1.44                   | 2.35                   | 171        | 0.63                 |                                |
| 6/4/55                         | 26.8                  | 21.8                  | 21.2                   | 1.58                   | 1.57                   | 152        | ----                 |                                | 6/4/55      | 32.0                  | 31.1                  | 26.6                   | 2.38                   | 2.37                   | 169        | ----                 |                                |
| Site 56, Wom Co., Wis.         |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Gloucester SIL/SIL (ML)        |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| 5/28/54                        | 36.5                  | 32.8                  | 27.3                   | 2.74                   | 2.48                   | 265        | ----                 |                                | 5/28/54     | 40.4                  | 26.3                  | 25.9                   | 2.37                   | 2.30                   | 105        | ----                 |                                |
| 7/23/54                        | 24.9                  | 21.7                  | 19.5                   | 1.87                   | 1.64                   | 300        | ----                 |                                | 7/23/54     | 42.2                  | 16.7                  | 21.9                   | 0.95                   | 1.48                   | 100        | ----                 |                                |
| 8/12/54                        | 16.8                  | 15.0                  | 13.3                   | 1.26                   | 1.13                   | 300        | ----                 |                                | 8/12/54     | 15.0                  | 11.2                  | 15.6                   | 1.25                   | 0.98                   | 300        | ----                 |                                |
| 10/16/54                       | 33.5                  | 26.5                  | 23.8                   | 2.51                   | 2.00                   | 182        | 0.58                 |                                | 10/16/54    | 23.6                  | 26.6                  | 19.6                   | 1.84                   | 2.33                   | 174        | 0.34                 |                                |
| 4/15/55                        | 34.6                  | 24.6                  | 24.2                   | 2.00                   | 1.86                   | 172        | 0.44                 |                                | 4/15/55     | 22.6                  | 24.5                  | 26.3                   | 1.76                   | 2.17                   | 166        | ----                 |                                |
| 5/1/55                         | 32.7                  | 27.4                  | 22.9                   | 2.45                   | 2.07                   | 187        | 0.63                 |                                | 5/1/55      | 31.4                  | 27.5                  | 27.4                   | 2.45                   | 2.41                   | 96         | 0.74                 |                                |
| 5/26/55                        | 31.2                  | 21.1                  | 19.1                   | 2.34                   | 1.60                   | 272        | ----                 |                                | 5/26/55     | 27.5                  | 23.0                  | 23.6                   | 2.15                   | 2.01                   | 202        | NT                   |                                |
| Site 58, Houston Co., Minn.    |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Fayette SIL/SIL (CL)           |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| 6/29/54                        | 31.5                  | 31.6                  | 29.3                   | 2.27                   | 2.33                   | 180        | ----                 |                                | 6/29/54     | 23.2                  | 20.9                  | 21.7                   | 1.73                   | 1.73                   | 222        | ----                 |                                |
| 7/26/54                        | 13.8                  | 25.1                  | 25.5                   | 1.42                   | 1.85                   | 300        | ----                 |                                | 7/26/54     | 9.8                   | 15.5                  | 18.0                   | 0.75                   | 1.28                   | 300        | ----                 |                                |
| 8/16/54                        | 23.6                  | 24.0                  | 25.9                   | 1.70                   | 1.77                   | 300        | ----                 |                                | 8/16/54     | 23.5                  | 19.5                  | 20.7                   | 1.80                   | 1.61                   | 271        | ----                 |                                |
| 9/17/54                        | 23.9                  | 28.7                  | 28.1                   | 2.15                   | 2.12                   | 25         | 0.61                 |                                | 9/17/54     | 27.8                  | 26.0                  | 25.5                   | 2.14                   | 2.22                   | 126        | 0.48                 |                                |
| 11/12/54                       | 29.9                  | 36.1                  | 30.3                   | 2.15                   | 2.66                   | 230        | NT                   |                                | 11/12/54    | 27.3                  | 26.8                  | 24.3                   | 2.10                   | 2.22                   | 161        | ----                 |                                |
| 4/14/55                        | 31.2                  | 29.4                  | 33.3                   | 2.25                   | 2.17                   | 173        | 0.49                 |                                | 4/14/55     | 39.1                  | 28.8                  | 26.3                   | 2.23                   | 2.35                   | 3          | 0.66                 |                                |
| 5/10/55                        | 23.8                  | 25.6                  | 27.5                   | 1.71                   | 1.89                   | 300        | NT                   |                                | 5/10/55     | 27.3                  | 27.4                  | 24.8                   | 2.10                   | 2.27                   | 137        | 0.47                 |                                |
| 6/1/55                         | 26.9                  | 26.9                  | 25.7                   | 1.94                   | 1.93                   | 285        | ----                 |                                | 6/1/55      | 26.3                  | 27.3                  | 26.1                   | 2.06                   | 2.26                   | 111        | ----                 |                                |
| Site 59, Houston Co., Minn.    |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| Dubuque L/L (CL)               |                       |                       |                        |                        |                        |            |                      |                                |             |                       |                       |                        |                        |                        |            |                      |                                |
| 6/29/54                        | 31.5                  | 31.6                  | 29.3                   | 2.27                   | 2.33                   | 180        | ----                 |                                | 6/29/54     | 23.2                  | 20.9                  | 21.7                   | 1.73                   | 1.73                   | 222        | ----                 |                                |
| 7/26/54                        | 13.8                  | 25.1                  | 25.5                   | 1.42                   | 1.85                   | 300        | ----                 |                                | 7/26/54     | 9.8                   | 15.5                  | 18.0                   | 0.75                   | 1.28                   | 300        | ----                 |                                |
| 8/16/54                        | 23.6                  | 24.0                  | 25.9                   | 1.70                   | 1.77                   | 300        | ----                 |                                | 8/16/54     | 23.5                  | 19.5                  | 20.7                   | 1.80                   | 1.61                   | 271        | ----                 |                                |
| 9/17/54                        | 23.9                  | 28.7                  | 28.1                   | 2.15                   | 2.12                   | 25         | 0.61                 |                                | 9/17/54     | 27.8                  | 26.0                  | 25.5                   | 2.14                   | 2.22                   | 126        | 0.48                 |                                |
| 11/12/54                       | 29.9                  | 36.1                  | 30.3                   | 2.15                   | 2.66                   | 230        | NT                   |                                | 11/12/54    | 27.3                  | 26.8                  | 24.3                   | 2.10                   | 2.22                   | 161        | ----                 |                                |
| 4/14/55                        | 31.2                  | 29.4                  | 33.3                   | 2.25                   | 2.17                   | 173        | 0.49                 |                                | 4/14/55     | 39.1                  | 28.8                  | 26.3                   | 2.23                   | 2.35                   | 3          | 0.66                 |                                |
| 5/10/55                        | 23.8                  | 25.6                  | 27.5                   | 1.71                   | 1.89                   | 300        | NT                   |                                | 5/10/55     | 27.3                  | 27.4                  | 24.8                   | 2.10                   | 2.27                   | 137        | 0.47                 |                                |
| 6/1/55                         | 26.9                  | 26.9                  | 25.7                   | 1.94                   | 1.93                   | 285        | ----                 |                                | 6/1/55      | 26.3                  | 27.3                  | 26.1                   | 2.06                   | 2.26                   | 111        | ----                 |                                |



Table B3c (Continued)  
Lake States Region. (Continued)

| Soil Moisture Content       |                         |                          |                           |                           |                           |                         |                          |                           |                           | Remold-<br>ing<br>Index   | Depth to<br>Water<br>Table<br>in. | Soil Moisture Content   |                          |                           |                           |                           |                         |                          |                           |                           |                           | Remold-<br>ing<br>Index | Depth to<br>Water<br>Table<br>in. |
|-----------------------------|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|-----------------------------------|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|-------------------------|-----------------------------------|
| Percent Weight Basis        |                         |                          |                           |                           | in. 6 in.                 |                         |                          |                           |                           |                           |                                   | Percent Weight Basis    |                          |                           |                           |                           | in. 6 in.               |                          |                           |                           |                           |                         |                                   |
| Sample<br>Date              | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 18- to<br>24-in.<br>Depth | 24- to<br>30-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 18- to<br>24-in.<br>Depth | 24- to<br>30-in.<br>Depth | Sample<br>Date                    | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 18- to<br>24-in.<br>Depth | 24- to<br>30-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 18- to<br>24-in.<br>Depth | 24- to<br>30-in.<br>Depth |                         |                                   |
| Site 61, Fayette Co., Iowa  |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| O'Neill Sil/Sil (SH)        |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| 6/30/54                     | 26.2                    | 12.4                     | 20.6                      | 1.90                      | 1.48                      | 93                      | ----                     | ----                      | ----                      | ----                      | 6/30/54                           | 29.1                    | 27.1                     | 26.3                      | 1.86                      | 1.48                      | 95                      | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 7/27/54                     | 20.3                    | 15.4                     | 13.2                      | 1.47                      | 1.46                      | 248                     | ----                     | ----                      | ----                      | ----                      | 7/27/54                           | 24.6                    | 23.1                     | 24.0                      | 1.39                      | 1.73                      | 202                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 8/17/54                     | 13.4                    | 11.8                     | 9.7                       | 1.41                      | 0.77                      | 300                     | ----                     | ----                      | ----                      | ----                      | 8/17/54                           | 17.2                    | 18.9                     | 19.0                      | 1.12                      | 1.46                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 9/13/54                     | 13.0                    | 11.3                     | 9.7                       | 1.31                      | 0.77                      | 300                     | NT                       | ----                      | ----                      | ----                      | 9/13/54                           | 20.0                    | 19.4                     | 18.2                      | 1.72                      | 1.50                      | 293                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 11/12/54                    | 24.3                    | 13.0                     | 10.2                      | 1.76                      | 1.63                      | 230                     | ----                     | ----                      | ----                      | ----                      | 11/12/54                          | 20.0                    | 20.2                     | 24.0                      | 1.27                      | 1.20                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 3/31/55                     | 25.8                    | 20.0                     | 18.5                      | 1.73                      | 1.63                      | 134                     | NT                       | ----                      | ----                      | ----                      | 3/31/55                           | 27.2                    | 25.1                     | 24.1                      | 1.75                      | 1.70                      | 220                     | 0.74                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 5/10/55                     | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 5/10/55                           | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 6/2/55                      | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 6/2/55                            | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| Site 62, Fayette Co., Iowa  |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| Carlington L/L (CL)         |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| 6/30/54                     | 26.2                    | 12.4                     | 20.6                      | 1.90                      | 1.48                      | 93                      | ----                     | ----                      | ----                      | ----                      | 6/30/54                           | 29.1                    | 27.1                     | 26.3                      | 1.86                      | 1.48                      | 95                      | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 7/27/54                     | 20.3                    | 15.4                     | 13.2                      | 1.47                      | 1.46                      | 248                     | ----                     | ----                      | ----                      | ----                      | 7/27/54                           | 24.6                    | 23.1                     | 24.0                      | 1.39                      | 1.73                      | 202                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 8/17/54                     | 13.4                    | 11.8                     | 9.7                       | 1.41                      | 0.77                      | 300                     | ----                     | ----                      | ----                      | ----                      | 8/17/54                           | 17.2                    | 18.9                     | 19.0                      | 1.12                      | 1.46                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 9/13/54                     | 13.0                    | 11.3                     | 9.7                       | 1.31                      | 0.77                      | 300                     | NT                       | ----                      | ----                      | ----                      | 9/13/54                           | 20.0                    | 19.4                     | 18.2                      | 1.72                      | 1.50                      | 293                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 11/12/54                    | 24.3                    | 13.0                     | 10.2                      | 1.76                      | 1.63                      | 230                     | ----                     | ----                      | ----                      | ----                      | 11/12/54                          | 20.0                    | 20.2                     | 24.0                      | 1.27                      | 1.20                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 3/31/55                     | 25.8                    | 20.0                     | 18.5                      | 1.73                      | 1.63                      | 134                     | NT                       | ----                      | ----                      | ----                      | 3/31/55                           | 27.2                    | 25.1                     | 24.1                      | 1.75                      | 1.70                      | 220                     | 0.74                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 5/10/55                     | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 5/10/55                           | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 6/2/55                      | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 6/2/55                            | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| Site 63, Fayette Co., Iowa  |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| Plainfield Sil/Sil (SH)     |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| 6/30/54                     | 26.2                    | 12.4                     | 20.6                      | 1.90                      | 1.48                      | 93                      | ----                     | ----                      | ----                      | ----                      | 6/30/54                           | 29.1                    | 27.1                     | 26.3                      | 1.86                      | 1.48                      | 95                      | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 7/27/54                     | 20.3                    | 15.4                     | 13.2                      | 1.47                      | 1.46                      | 248                     | ----                     | ----                      | ----                      | ----                      | 7/27/54                           | 24.6                    | 23.1                     | 24.0                      | 1.39                      | 1.73                      | 202                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 8/17/54                     | 13.4                    | 11.8                     | 9.7                       | 1.41                      | 0.77                      | 300                     | ----                     | ----                      | ----                      | ----                      | 8/17/54                           | 17.2                    | 18.9                     | 19.0                      | 1.12                      | 1.46                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 9/13/54                     | 13.0                    | 11.3                     | 9.7                       | 1.31                      | 0.77                      | 300                     | NT                       | ----                      | ----                      | ----                      | 9/13/54                           | 20.0                    | 19.4                     | 18.2                      | 1.72                      | 1.50                      | 293                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 11/12/54                    | 24.3                    | 13.0                     | 10.2                      | 1.76                      | 1.63                      | 230                     | ----                     | ----                      | ----                      | ----                      | 11/12/54                          | 20.0                    | 20.2                     | 24.0                      | 1.27                      | 1.20                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 3/31/55                     | 25.8                    | 20.0                     | 18.5                      | 1.73                      | 1.63                      | 134                     | NT                       | ----                      | ----                      | ----                      | 3/31/55                           | 27.2                    | 25.1                     | 24.1                      | 1.75                      | 1.70                      | 220                     | 0.74                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 5/10/55                     | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 5/10/55                           | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 6/2/55                      | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 6/2/55                            | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| Site 64, Buchanan Co., Iowa |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| Carlington L/L (CL)         |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| 6/30/54                     | 26.2                    | 12.4                     | 20.6                      | 1.90                      | 1.48                      | 93                      | ----                     | ----                      | ----                      | ----                      | 6/30/54                           | 29.1                    | 27.1                     | 26.3                      | 1.86                      | 1.48                      | 95                      | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 7/27/54                     | 20.3                    | 15.4                     | 13.2                      | 1.47                      | 1.46                      | 248                     | ----                     | ----                      | ----                      | ----                      | 7/27/54                           | 24.6                    | 23.1                     | 24.0                      | 1.39                      | 1.73                      | 202                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 8/17/54                     | 13.4                    | 11.8                     | 9.7                       | 1.41                      | 0.77                      | 300                     | ----                     | ----                      | ----                      | ----                      | 8/17/54                           | 17.2                    | 18.9                     | 19.0                      | 1.12                      | 1.46                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 9/13/54                     | 13.0                    | 11.3                     | 9.7                       | 1.31                      | 0.77                      | 300                     | NT                       | ----                      | ----                      | ----                      | 9/13/54                           | 20.0                    | 19.4                     | 18.2                      | 1.72                      | 1.50                      | 293                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 11/12/54                    | 24.3                    | 13.0                     | 10.2                      | 1.76                      | 1.63                      | 230                     | ----                     | ----                      | ----                      | ----                      | 11/12/54                          | 20.0                    | 20.2                     | 24.0                      | 1.27                      | 1.20                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 3/31/55                     | 25.8                    | 20.0                     | 18.5                      | 1.73                      | 1.63                      | 134                     | NT                       | ----                      | ----                      | ----                      | 3/31/55                           | 27.2                    | 25.1                     | 24.1                      | 1.75                      | 1.70                      | 220                     | 0.74                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 5/10/55                     | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 5/10/55                           | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 6/2/55                      | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 6/2/55                            | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| Site 65, Buchanan Co., Iowa |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| Carlington Sil/Sil (SH)     |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| 6/30/54                     | 26.2                    | 12.4                     | 20.6                      | 1.90                      | 1.48                      | 93                      | ----                     | ----                      | ----                      | ----                      | 6/30/54                           | 29.1                    | 27.1                     | 26.3                      | 1.86                      | 1.48                      | 95                      | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 7/27/54                     | 20.3                    | 15.4                     | 13.2                      | 1.47                      | 1.46                      | 248                     | ----                     | ----                      | ----                      | ----                      | 7/27/54                           | 24.6                    | 23.1                     | 24.0                      | 1.39                      | 1.73                      | 202                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 8/17/54                     | 13.4                    | 11.8                     | 9.7                       | 1.41                      | 0.77                      | 300                     | ----                     | ----                      | ----                      | ----                      | 8/17/54                           | 17.2                    | 18.9                     | 19.0                      | 1.12                      | 1.46                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 9/13/54                     | 13.0                    | 11.3                     | 9.7                       | 1.31                      | 0.77                      | 300                     | NT                       | ----                      | ----                      | ----                      | 9/13/54                           | 20.0                    | 19.4                     | 18.2                      | 1.72                      | 1.50                      | 293                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 11/12/54                    | 24.3                    | 13.0                     | 10.2                      | 1.76                      | 1.63                      | 230                     | ----                     | ----                      | ----                      | ----                      | 11/12/54                          | 20.0                    | 20.2                     | 24.0                      | 1.27                      | 1.20                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 3/31/55                     | 25.8                    | 20.0                     | 18.5                      | 1.73                      | 1.63                      | 134                     | NT                       | ----                      | ----                      | ----                      | 3/31/55                           | 27.2                    | 25.1                     | 24.1                      | 1.75                      | 1.70                      | 220                     | 0.74                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 5/10/55                     | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 5/10/55                           | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 6/2/55                      | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 6/2/55                            | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| Site 66, Buchanan Co., Iowa |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| Carlington L/L (CL)         |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| 6/30/54                     | 26.2                    | 12.4                     | 20.6                      | 1.90                      | 1.48                      | 93                      | ----                     | ----                      | ----                      | ----                      | 6/30/54                           | 29.1                    | 27.1                     | 26.3                      | 1.86                      | 1.48                      | 95                      | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 7/27/54                     | 20.3                    | 15.4                     | 13.2                      | 1.47                      | 1.46                      | 248                     | ----                     | ----                      | ----                      | ----                      | 7/27/54                           | 24.6                    | 23.1                     | 24.0                      | 1.39                      | 1.73                      | 202                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 8/17/54                     | 13.4                    | 11.8                     | 9.7                       | 1.41                      | 0.77                      | 300                     | ----                     | ----                      | ----                      | ----                      | 8/17/54                           | 17.2                    | 18.9                     | 19.0                      | 1.12                      | 1.46                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 9/13/54                     | 13.0                    | 11.3                     | 9.7                       | 1.31                      | 0.77                      | 300                     | NT                       | ----                      | ----                      | ----                      | 9/13/54                           | 20.0                    | 19.4                     | 18.2                      | 1.72                      | 1.50                      | 293                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 11/12/54                    | 24.3                    | 13.0                     | 10.2                      | 1.76                      | 1.63                      | 230                     | ----                     | ----                      | ----                      | ----                      | 11/12/54                          | 20.0                    | 20.2                     | 24.0                      | 1.27                      | 1.20                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 3/31/55                     | 25.8                    | 20.0                     | 18.5                      | 1.73                      | 1.63                      | 134                     | NT                       | ----                      | ----                      | ----                      | 3/31/55                           | 27.2                    | 25.1                     | 24.1                      | 1.75                      | 1.70                      | 220                     | 0.74                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 5/10/55                     | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 5/10/55                           | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 6/2/55                      | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 6/2/55                            | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| Site 67, Benton Co., Iowa   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| Carlington Sil/Sil (SH)     |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| 6/30/54                     | 26.2                    | 12.4                     | 20.6                      | 1.90                      | 1.48                      | 93                      | ----                     | ----                      | ----                      | ----                      | 6/30/54                           | 29.1                    | 27.1                     | 26.3                      | 1.86                      | 1.48                      | 95                      | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 7/27/54                     | 20.3                    | 15.4                     | 13.2                      | 1.47                      | 1.46                      | 248                     | ----                     | ----                      | ----                      | ----                      | 7/27/54                           | 24.6                    | 23.1                     | 24.0                      | 1.39                      | 1.73                      | 202                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 8/17/54                     | 13.4                    | 11.8                     | 9.7                       | 1.41                      | 0.77                      | 300                     | ----                     | ----                      | ----                      | ----                      | 8/17/54                           | 17.2                    | 18.9                     | 19.0                      | 1.12                      | 1.46                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 9/13/54                     | 13.0                    | 11.3                     | 9.7                       | 1.31                      | 0.77                      | 300                     | NT                       | ----                      | ----                      | ----                      | 9/13/54                           | 20.0                    | 19.4                     | 18.2                      | 1.72                      | 1.50                      | 293                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 11/12/54                    | 24.3                    | 13.0                     | 10.2                      | 1.76                      | 1.63                      | 230                     | ----                     | ----                      | ----                      | ----                      | 11/12/54                          | 20.0                    | 20.2                     | 24.0                      | 1.27                      | 1.20                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 3/31/55                     | 25.8                    | 20.0                     | 18.5                      | 1.73                      | 1.63                      | 134                     | NT                       | ----                      | ----                      | ----                      | 3/31/55                           | 27.2                    | 25.1                     | 24.1                      | 1.75                      | 1.70                      | 220                     | 0.74                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 5/10/55                     | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 5/10/55                           | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 6/2/55                      | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 6/2/55                            | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| Site 68, Benton Co., Iowa   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| Carlington Sil/Sil (SH)     |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| 6/30/54                     | 26.2                    | 12.4                     | 20.6                      | 1.90                      | 1.48                      | 93                      | ----                     | ----                      | ----                      | ----                      | 6/30/54                           | 29.1                    | 27.1                     | 26.3                      | 1.86                      | 1.48                      | 95                      | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 7/27/54                     | 20.3                    | 15.4                     | 13.2                      | 1.47                      | 1.46                      | 248                     | ----                     | ----                      | ----                      | ----                      | 7/27/54                           | 24.6                    | 23.1                     | 24.0                      | 1.39                      | 1.73                      | 202                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 8/17/54                     | 13.4                    | 11.8                     | 9.7                       | 1.41                      | 0.77                      | 300                     | ----                     | ----                      | ----                      | ----                      | 8/17/54                           | 17.2                    | 18.9                     | 19.0                      | 1.12                      | 1.46                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 9/13/54                     | 13.0                    | 11.3                     | 9.7                       | 1.31                      | 0.77                      | 300                     | NT                       | ----                      | ----                      | ----                      | 9/13/54                           | 20.0                    | 19.4                     | 18.2                      | 1.72                      | 1.50                      | 293                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 11/12/54                    | 24.3                    | 13.0                     | 10.2                      | 1.76                      | 1.63                      | 230                     | ----                     | ----                      | ----                      | ----                      | 11/12/54                          | 20.0                    | 20.2                     | 24.0                      | 1.27                      | 1.20                      | 300                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 3/31/55                     | 25.8                    | 20.0                     | 18.5                      | 1.73                      | 1.63                      | 134                     | NT                       | ----                      | ----                      | ----                      | 3/31/55                           | 27.2                    | 25.1                     | 24.1                      | 1.75                      | 1.70                      | 220                     | 0.74                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 5/10/55                     | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 5/10/55                           | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| 6/2/55                      | 25.3                    | 17.4                     | 15.3                      | 1.91                      | 1.42                      | 139                     | ----                     | ----                      | ----                      | ----                      | 6/2/55                            | 31.0                    | 22.9                     | 21.2                      | 2.02                      | 1.77                      | 164                     | ----                     | ----                      | ----                      | ----                      | ----                    |                                   |
| Site 69, Benton Co., Iowa   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| Carlington Sil/Sil (SH)     |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |
| 6/3                         |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                                   |                         |                          |                           |                           |                           |                         |                          |                           |                           |                           |                         |                                   |



Table B1c (Continued)  
Lake States Region (Continued)

| Soil Moisture Content                                |       |           |       |           |       |            |       |            |       | Cone Index  | Penold-<br>ing Index | Depth<br>to<br>Water<br>Table<br>in. | Soil Moisture Content |       |           |          |           |       |            |      |            |     | Cone Index | Penold-<br>ing Index | Depth<br>to<br>Water<br>Table<br>in. |
|--|-------|-----------|-------|-----------|-------|------------|-------|------------|-------|---|----------------------|--------------------------------------|-----------------------|-------|-----------|----------|-----------|-------|------------|------|------------|-----|------------|----------------------|--------------------------------------|
| Percent Weight Basis                                 |       | in. 0 in. |       | in. 6 in. |       | in. 12 in. |       | in. 18 in. |       |   |                      |                                      | Percent Weight Basis  |       | in. 0 in. |          | in. 6 in. |       | in. 12 in. |      | in. 18 in. |     |            |                      |                                      |
| Sample Date  | Depth | Depth     | Depth | Depth     | Depth | Depth      | Depth | Depth      | Depth | Sample Date   | Depth                | Depth                                | Depth                 | Depth | Depth     | Depth    | Depth     | Depth | Depth      |      |            |     |            |                      |                                      |
| Site 76, Jasper Co., Iowa<br>Wabash Sil/Sil (CL)     |       |           |       |           |       |            |       |            |       | Site 77, Warren Co., Iowa<br>Shelby Sil/Sil (CL)      |                      |                                      |                       |       |           |          |           |       |            |      |            |     |            |                      |                                      |
| 7/1/54   | 22.9  | 31.1      | 32.3  | 1.52      | 2.35  | 165        | ----  | 7/1/54     | 16.9  | 17.3  | 24.2                 | 1.13                                 | 1.27                  | 300   | ----      | 7/1/54   | 16.9      | 17.3  | 24.2       | 1.13 | 1.27       | 300 | ----       |                      |                                      |
| 7/27/54  | 20.3  | 19.4      | 15.5  | 1.35      | 1.47  | 293        | ----  | 7/27/54    | 14.5  | 13.4  | 15.0                 | 1.01                                 | 0.98                  | 300   | ----      | 7/27/54  | 14.5      | 13.4  | 15.0       | 1.01 | 0.98       | 300 | ----       |                      |                                      |
| 8/17/54  | 35.3  | 33.5      | 35.2  | 2.33      | 2.53  | 104        | ----  | 8/17/54    | 33.8  | 30.5  | 28.8                 | 2.35                                 | 2.23                  | 113   | ----      | 8/17/54  | 33.8      | 30.5  | 28.8       | 2.35 | 2.23       | 113 | ----       |                      |                                      |
| 9/13/54  | 22.6  | 26.1      | 29.0  | 1.51      | 1.57  | 236        | 0.36  | 9/13/54    | 21.2  | 22.0  | 26.1                 | 1.48                                 | 1.64                  | 300   | NT        | 9/13/54  | 21.2      | 22.0  | 26.1       | 1.48 | 1.64       | 300 | NT         |                      |                                      |
| 11/14/54   | 27.5  | 30.1      | 32.1  | 1.95      | 2.25  | 193        | ----  | 11/14/54   | 23.8  | 22.7  | 25.2                 | 1.65                                 | 1.68                  | 242   | ----      | 11/14/54 | 23.8      | 22.7  | 25.2       | 1.65 | 1.68       | 242 | ----       |                      |                                      |
| 4/1/55   | 31.5  | 31.7      | 32.3  | 2.10      | 2.40  | 147        | 0.87  | 4/1/55     | 31.5  | 26.3  | 29.2                 | 2.20                                 | 1.93                  | 160   | 0.92      | 4/1/55   | 31.5      | 26.3  | 29.2       | 2.20 | 1.93       | 160 | 0.92       |                      |                                      |
| 5/11/55  | 34.4  | 29.0      | 31.3  | 2.22      | 2.12  | 134        | 0.84  | 5/11/55    | 30.3  | 24.3  | 27.1                 | 2.14                                 | 1.78                  | 195   | 0.84      | 5/11/55  | 30.3      | 24.3  | 27.1       | 2.14 | 1.78       | 195 | 0.84       |                      |                                      |
| 6/2/55   | 25.0  | 21.4      | 24.8  | 1.67      | 1.62  | 247        | ----  | 6/2/55     | 20.1  | 17.0  | 23.6                 | 1.40                                 | 1.24                  | 300   | ----      | 6/2/55   | 20.1      | 17.0  | 23.6       | 1.40 | 1.24       | 300 | ----       |                      |                                      |
| Site 78, Warren Co., Iowa<br>Sharpsburg Sil/Sil (CL) |       |           |       |           |       |            |       |            |       | Site 79, Madison Co., Iowa<br>Sharpsburg Sil/Sil (CL) |                      |                                      |                       |       |           |          |           |       |            |      |            |     |            |                      |                                      |
| 7/1/54   | 18.3  | 21.7      | 22.2  | 1.42      | 1.51  | 254        | ----  | 7/1/54     | 20.9  | 19.3  | 20.8                 | 1.42                                 | 1.41                  | 300   | ----      | 7/1/54   | 20.9      | 19.3  | 20.8       | 1.42 | 1.41       | 300 | ----       |                      |                                      |
| 7/23/54  | 13.1  | 16.4      | 17.0  | 0.91      | 1.22  | 146        | ----  | 7/23/54    | 15.2  | 14.4  | 15.0                 | 1.04                                 | 1.07                  | 300   | ----      | 7/23/54  | 15.2      | 14.4  | 15.0       | 1.04 | 1.07       | 300 | ----       |                      |                                      |
| 8/13/54  | 25.2  | 29.8      | 24.2  | 1.38      | 2.22  | 146        | ----  | 8/13/54    | 37.3  | 30.7  | 23.0                 | 2.55                                 | 2.25                  | 353   | ----      | 8/13/54  | 37.3      | 30.7  | 23.0       | 2.55 | 2.25       | 353 | ----       |                      |                                      |
| 9/13/54  | 19.5  | 22.6      | 20.0  | 1.32      | 1.68  | 300        | NT    | 9/13/54    | 20.3  | 17.7  | 23.4                 | 1.39                                 | 1.44                  | 300   | NT        | 9/13/54  | 20.3      | 17.7  | 23.4       | 1.39 | 1.44       | 300 | NT         |                      |                                      |
| 10/14/54   | 22.4  | 25.6      | 27.6  | 1.69      | 1.70  | 221        | ----  | 10/14/54   | 29.0  | 27.2  | 24.3                 | 1.36                                 | 1.39                  | 415   | ----      | 10/14/54 | 29.0      | 27.2  | 24.3       | 1.36 | 1.39       | 415 | ----       |                      |                                      |
| 4/1/55   | 22.1  | 26.6      | 26.6  | 1.67      | 1.78  | 175        | 0.20  | 4/1/55     | 34.7  | 27.3  | 26.6                 | 2.77                                 | 2.44                  | 330   | 0.86      | 4/1/55   | 34.7      | 27.3  | 26.6       | 2.77 | 2.44       | 330 | 0.86       |                      |                                      |
| 5/12/55  | 25.3  | 30.6      | 30.0  | 1.91      | 2.23  | 142        | 0.76  | 5/12/55    | 24.1  | 21.9  | 23.1                 | 1.65                                 | 1.60                  | 300   | ----      | 5/12/55  | 24.1      | 21.9  | 23.1       | 1.65 | 1.60       | 300 | ----       |                      |                                      |
| 6/1/55   | 22.8  | 23.6      | 26.2  | 1.72      | 1.76  | 217        | ----  | 6/1/55     | 16.7  | 14.6  | 17.1                 | 1.14                                 | 1.07                  | 300   | ----      | 6/1/55   | 16.7      | 14.6  | 17.1       | 1.14 | 1.07       | 300 | ----       |                      |                                      |
| Plowed before 4/1/55                                 |       |           |       |           |       |            |       |            |       | Site 80, Madison Co., Iowa<br>Shelby Sil/Sil (CL)     |                      |                                      |                       |       |           |          |           |       |            |      |            |     |            |                      |                                      |
| 7/1/54   | 14.7  | 23.8      | 23.0  | 1.18      | 2.06  | 300        | ----  | 7/1/54     | 15.0  | 17.7  | 23.8                 | 1.09                                 | 1.44                  | 300   | ----      | 7/1/54   | 15.0      | 17.7  | 23.8       | 1.09 | 1.44       | 300 | ----       |                      |                                      |
| 7/28/54  | 11.6  | 15.3      | 16.9  | 0.93      | 1.32  | 300        | ----  | 7/28/54    | 13.2  | 14.4  | 17.4                 | 0.96                                 | 1.05                  | 300   | ----      | 7/28/54  | 13.2      | 14.4  | 17.4       | 0.96 | 1.05       | 300 | ----       |                      |                                      |
| 8/19/54  | 23.2  | 21.5      | 20.6  | 2.35      | 1.66  | 212        | ----  | 8/19/54    | 31.4  | 17.6  | 17.4                 | 2.25                                 | 1.60                  | 266   | ----      | 8/19/54  | 31.4      | 17.6  | 17.4       | 2.25 | 1.60       | 266 | ----       |                      |                                      |
| 9/13/54  | 18.0  | 25.3      | 25.2  | 1.45      | 2.23  | 300        | NT    | 9/13/54    | 17.2  | 15.4  | 21.1                 | 1.75                                 | 1.30                  | 300   | NT        | 9/13/54  | 17.2      | 15.4  | 21.1       | 1.75 | 1.30       | 300 | NT         |                      |                                      |
| 11/14/54   | 30.0  | 31.3      | 30.2  | 2.41      | 2.75  | 132        | NT    | 11/14/54   | 24.4  | 21.9  | 21.1                 | 4.75                                 | 2.72                  | 300   | ----      | 11/14/54 | 24.4      | 21.9  | 21.1       | 4.75 | 2.72       | 300 | ----       |                      |                                      |
| 4/2/55   | 27.4  | 23.7      | 22.7  | 2.20      | 2.57  | 117        | 1.04  | 4/2/55     | 29.6  | 27.9  | 26.0                 | 2.15                                 | 2.28                  | 213   | 0.86      | 4/2/55   | 29.6      | 27.9  | 26.0       | 2.15 | 2.28       | 213 | 0.86       |                      |                                      |
| 5/12/55  | 22.1  | 29.7      | 25.3  | 1.80      | 2.48  | 199        | 1.03  | 5/12/55    | 24.8  | 21.0  | 26.3                 | 1.60                                 | 1.96                  | 300   | ----      | 5/12/55  | 24.8      | 21.0  | 26.3       | 1.60 | 1.96       | 300 | ----       |                      |                                      |
| 6/1/55   | 20.6  | 21.7      | 24.2  | 1.66      | 1.37  | 300        | ----  | 6/1/55     | 18.6  | 14.0  | 17.1                 | 1.35                                 | 1.14                  | 300   | ----      | 6/1/55   | 18.6      | 14.0  | 17.1       | 1.35 | 1.14       | 300 | ----       |                      |                                      |
| Site 82, Adair Co., Iowa<br>Tama Sil/Sil (CL)        |       |           |       |           |       |            |       |            |       | Site 83, Adair Co., Iowa<br>Shelby L/CL (CL)          |                      |                                      |                       |       |           |          |           |       |            |      |            |     |            |                      |                                      |
| 7/2/54   | 15.8  | 17.7      | 24.5  | 1.28      | 1.55  | 300        | ----  | 7/2/54     | 13.5  | 15.4  | 17.1                 | 1.10                                 | 1.32                  | 300   | ----      | 7/2/54   | 13.5      | 15.4  | 17.1       | 1.10 | 1.32       | 300 | ----       |                      |                                      |
| 7/28/54  | 17.4  | 16.3      | 16.2  | 1.41      | 1.43  | 300        | ----  | 7/28/54    | 11.0  | 12.0  | 12.3                 | 0.70                                 | 1.03                  | 300   | ----      | 7/28/54  | 11.0      | 12.0  | 12.3       | 0.70 | 1.03       | 300 | ----       |                      |                                      |
| 8/15/54  | 10.0  | 17.9      | 25.3  | 2.43      | 1.57  | 219        | ----  | 8/15/54    | 28.9  | 22.1  | 16.0                 | 2.36                                 | 1.90                  | 185   | ----      | 8/15/54  | 28.9      | 22.1  | 16.0       | 2.36 | 1.90       | 185 | ----       |                      |                                      |
| 9/20/54  | 16.3  | 18.3      | 24.0  | 1.32      | 1.60  | 300        | NT    | 9/20/54    | 12.9  | 15.3  | 18.6                 | 1.05                                 | 1.36                  | 300   | NT        | 9/20/54  | 12.9      | 15.3  | 18.6       | 1.05 | 1.36       | 300 | NT         |                      |                                      |
| 11/14/54   | 22.3  | 25.6      | 25.7  | 1.81      | 2.24  | 214        | ----  | 11/14/54   | 20.1  | 22.5  | 21.2                 | 1.64                                 | 1.93                  | 253   | ----      | 11/14/54 | 20.1      | 22.5  | 21.2       | 1.64 | 1.93       | 253 | ----       |                      |                                      |
| 4/2/55   | 24.7  | 25.0      | 26.7  | 2.00      | 2.12  | 203        | NT    | 4/2/55     | 23.6  | 23.2  | 21.1                 | 1.92                                 | 1.99                  | 200   | 1.00      | 4/2/55   | 23.6      | 23.2  | 21.1       | 1.92 | 1.99       | 200 | 1.00       |                      |                                      |
| 5/12/55  | 23.3  | 19.5      | 23.5  | 1.31      | 1.71  | 300        | NT    | 5/12/55    | 23.1  | 18.9  | 18.7                 | 1.98                                 | 1.62                  | 279   | NT        | 5/12/55  | 23.1      | 18.9  | 18.7       | 1.98 | 1.62       | 279 | NT         |                      |                                      |
| 6/1/55   | 18.2  | 19.4      | 19.3  | 1.52      | 1.70  | 300        | ----  | 6/1/55     | 11.3  | 10.5  | 9.5                  | 0.36                                 | 0.30                  | 300   | ----      | 6/1/55   | 11.3      | 10.5  | 9.5        | 0.36 | 0.30       | 300 | ----       |                      |                                      |
| Site 84, Adair Co., Iowa<br>Winterset Sil/Sil (CL)   |       |           |       |           |       |            |       |            |       | Site 85, Cass Co., Iowa<br>Unclassified Sil/Sil (CH)  |                      |                                      |                       |       |           |          |           |       |            |      |            |     |            |                      |                                      |
| 7/2/54   | 20.7  | 37.1      | 27.1  | 1.50      | 1.33  | 243        | ----  | 7/2/54     | 35.2  | 24.6  | 24.7                 | 2.15                                 | 1.93                  | 155   | ----      | 7/2/54   | 35.2      | 24.6  | 24.7       | 2.15 | 1.93       | 155 | ----       |                      |                                      |
| 7/28/54  | 20.2  | 20.6      | 20.2  | 1.52      | 1.47  | 269        | ----  | 7/28/54    | 24.5  | 13.7  | 23.1                 | 1.51                                 | 1.48                  | 300   | ----      | 7/28/54  | 24.5      | 13.7  | 23.1       | 1.51 | 1.48       | 300 | ----       |                      |                                      |
| 8/15/54  | 17.0  | 23.3      | 17.3  | 2.03      | 2.06  | 173        | ----  | 8/15/54    | 33.4  | 36.3  | 31.1                 | 2.36                                 | 2.85                  | 95    | ----      | 8/15/54  | 33.4      | 36.3  | 31.1       | 2.36 | 2.85       | 95  | ----       |                      |                                      |
| 9/20/54  | 4.0   | 25.2      | 27.2  | 1.32      | 1.30  | 300        | NT    | 9/20/54    | 34.7  | 27.7  | 26.5                 | 2.12                                 | 2.33                  | 166   | 0.95      | 9/20/54  | 34.7      | 27.7  | 26.5       | 2.12 | 2.33       | 166 | 0.95       |                      |                                      |
| 11/15/54   | 33.6  | 34.1      | 33.1  | 2.44      | 2.43  | 171        | ----  | 11/15/54   | 41.2  | 32.2  | 27.3                 | 2.52                                 | 2.53                  | 148   | ----      | 11/15/54 | 41.2      | 32.2  | 27.3       | 2.52 | 2.53       | 148 | ----       |                      |                                      |
| 4/2/55   | 33.3  | 33.3      | 33.5  | 1.69      | 2.35  | 138        | 0.32  | 4/2/55     | 33.0  | 39.0  | 28.5                 | 2.52                                 | 2.99                  | 161   | 0.99      | 4/2/55   | 33.3      | 33.3  | 33.5       | 1.69 | 2.35       | 138 | 0.32       |                      |                                      |
| 5/12/55  | 32.4  | 35.1      | 31.5  | 2.35      | 2.51  | 144        | 0.70  | 5/12/55    | 37.3  | 23.5  | 28.7                 | 2.31                                 | 2.32                  | 159   | 0.98      | 5/12/55  | 37.3      | 23.5  | 28.7       | 2.31 | 2.32       | 159 | 0.98       |                      |                                      |
| 6/1/55   | 24.0  | 17.6      | 27.6  | 1.76      | 1.26  | 232        | ----  | 6/1/55     | 26.5  | 13.3  | 22.5                 | 1.65                                 | 1.04                  | 298   | ----      | 6/1/55   | 26.5      | 13.3  | 22.5       | 1.65 | 1.04       | 298 | ----       |                      |                                      |
| Site 86, Cass Co., Iowa<br>Shelby Sil/Sil (CL)       |       |           |       |           |       |            |       |            |       | Site 87, Audubon Co., Iowa<br>Tama Sil/Sil (CL)       |                      |                                      |                       |       |           |          |           |       |            |      |            |     |            |                      |                                      |
| 7/2/54   | 17.5  | 12.5      | 15.2  | 1.41      | 1.46  | 300        | ----  | 7/2/54     | 20.4  | 23.2  | 27.1                 | 1.59                                 | 1.30                  | 300   | ----      | 7/2/54   | 20.4      | 23.2  | 27.1       | 1.59 | 1.30       | 300 | ----       |                      |                                      |
| 7/28/54  | 10.5  | 9.6       | 10.3  | 0.84      | 0.76  | 300        | ----  | 7/28/54    | 14.6  | 15.9  | 17.5                 | 1.14                                 | 1.23                  | 300   | ----      | 7/28/54  | 14.6      | 15.9  | 17.5       | 1.14 | 1.23       | 300 | ----       |                      |                                      |
| 8/13/54  | 26.3  | 21.0      | 12.3  | 2.15      | 1.60  | 300        | ----  | 8/13/54    | 27.3  | 13.5  | 17.5                 | 2.13                                 | 1.43                  | 300   | ----      | 8/13/54  | 27.3      | 13.5  | 17.5       | 2.13 | 1.43       | 300 | ----       |                      |                                      |
| 9/20/54  | 12.3  | 12.2      | 13.6  | 1.03      | 0.77  | 300        | NT    | 9/20/54    | 17.7  | 17.2  | 26.5                 | 1.54                                 | 1.80                  | 300   | NT        | 9/20/54  | 17.7      | 17.2  | 26.5       | 1.54 | 1.80       | 300 | NT         |                      |                                      |
| 11/15/54   | 17.2  | 20.2      | 16.7  | 1.54      | 1.60  | 300        | ----  | 11/15/54   | 26.3  | 32.4  | 35.3                 | 2.04                                 | 2.51                  | 151   | ----      | 11/15/54 | 26.3      | 32.4  | 35.3       | 2.04 | 2.51       | 151 | ----       |                      |                                      |
| 4/2/55   | 15.3  | 15.9      | 14.3  | 1.47      | 1.26  | 300        | NT    | 4/2/55     | 25.7  | 22.1  | 29.6                 | 2.06                                 | 2.17                  | 235   | 0.87      | 4/2/55   | 25.7      | 22.1  | 29.6       | 2.06 | 2.17       | 235 | 0.87       |                      |                                      |
| 5/12/55  | 22.5  | 18.0      | 12.9  | 1.31      | 1.42  | 300        | ----  | 5/12/55    | 25.3  | 13.2  | 13.2                 | 1.39                                 | 1.80                  | 300   | NT        | 5/12/55  | 25.3      | 13.2  | 13.2       | 1.39 | 1.80       | 300 | NT         |                      |                                      |
| 5/31/55  | 10.7  | 11.3      | 11.5  | 0.36      | 0.39  | 300        | ----  | 5/31/55    | 17.3  | 16.8  | 17.5                 | 1.35                                 | 1.30                  | 300   | ----      | 5/31/55  | 17.3      | 16.8  | 17.5       | 1.35 | 1.30       | 300 | ----       |                      |                                      |
| Site 88, Audubon Co., Iowa<br>Wabash L/Sil (CL)      |       |           |       |           |       |            |       |            |       | Site 89, Audubon Co., Iowa<br>Marshall Sil/Sil (CL)   |                      |                                      |                       |       |           |          |           |       |            |      |            |     |            |                      |                                      |
| 7/2/54   | 17.1  | 16.8      | 23.4  | 1.05      | 1.01  | 300        | ----  | 7/2/54     | 16.3  | 17.4  | 18.4                 | 1.10                                 | 1.13                  | 300   | ----      | 7/2/54   | 16.3      | 17.4  | 18.4       | 1.10 | 1.13       | 300 | ----       |                      |                                      |
| 7/28/54  | 14.7  | 15.8      | 20.0  | 0.90      | 0.95  | 300        | ----  | 7/28/54    | 13.1  | 12.5  | 11.2                 | 0.77                                 | 0.81                  | 300   | ----      | 7/28/54  | 13.1      | 12.5  | 11.2       | 0.77 | 0.81       | 300 | ----       |                      |                                      |
| 8/13/54  | 34.5  | 23.1      | 22.0  | 2.11      | 1.37  | 225        | ----  | 8/13/54    | 27.7  | 18.1  | 13.0                 | 1.68                                 | 1.17                  | 295   | ----      | 8/13/54  | 27.7      | 18.1  | 13.0       | 1.68 | 1.17       | 295 | ----       |                      |                                      |
| 9/20/54  | 20.4  | 20.6      | 25.9  | 1.25      | 1.50  | 300        | NT    | 9/20/54    | 17.0  | 20.6  | 25.6                 | 1.27                                 | 1.33                  | 300   | NT        | 9/20/54  | 17.0      | 20.6  | 25.6       | 1.27 | 1.33       | 300 | NT         |                      |                                      |
| 11/15/54   | 32.7  | 31.4      | 35.1  | 1.90      |       |            |       |            |       |   |                      |                                      |                       |       |           |          |           |       |            |      |            |     |            |                      |                                      |



Table B3c (Continued)  
Lake States Region (Continued)

| Sample Date                   | Soil Moisture Content |              |               |               |               | Cone Index | Remold-<br>ing Index | Depth to<br>Water Table<br>in. | Sample Date | Soil Moisture Content |              |               |               |               | Cone Index | Remold-<br>ing Index | Depth to<br>Water Table<br>in. |
|-------------------------------|-----------------------|--------------|---------------|---------------|---------------|------------|----------------------|--------------------------------|-------------|-----------------------|--------------|---------------|---------------|---------------|------------|----------------------|--------------------------------|
|                               | Percent Weight Basis  |              |               |               |               |            |                      |                                |             | Percent Weight Basis  |              |               |               |               |            |                      |                                |
|                               | 0- to 6-in.           | 6- to 12-in. | 12- to 18-in. | 18- to 24-in. | 24- to 30-in. |            |                      |                                |             | 0- to 6-in.           | 6- to 12-in. | 12- to 18-in. | 18- to 24-in. | 24- to 30-in. |            |                      |                                |
| Depth                         | Depth                 | Depth        | Depth         | Depth         | Depth         | Depth      | Depth                | Depth                          | Depth       | Depth                 | Depth        | Depth         | Depth         | Depth         | Depth      | Depth                |                                |
| Site 90, Greene Co., Iowa     |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| Storsten SIL/L (CL)           |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| 7/2/54                        | 16.7                  | 17.5         | 21.1          | 1.21          | 1.45          | 300        | ----                 |                                | 7/2/54      | 16.1                  | 17.7         | 20.6          | 1.06          | 1.35          | 300        | ----                 |                                |
| 7/29/54                       | 14.2                  | 13.6         | 16.2          | 1.08          | 1.13          | 300        | ----                 |                                | 7/29/54     | 12.9                  | 11.6         | 11.3          | 0.85          | 0.88          | 300        | ----                 |                                |
| 8/18/54                       | 26.2                  | 26.4         | 22.6          | 2.34          | 2.20          | 477        | ----                 |                                | 8/18/54     | 31.6                  | 28.8         | 18.4          | 2.09          | 2.19          | 153        | ----                 |                                |
| 9/20/54                       | 24.7                  | 21.1         | 23.7          | 1.72          | 1.75          | 149        | 1.09                 |                                | 9/20/54     | 23.7                  | 20.5         | 21.1          | 1.56          | 1.56          | 258        | NT                   |                                |
| 11/15/54                      | 26.5                  | 27.7         | 24.1          | 1.42          | 1.38          | 139        | ----                 |                                | 11/15/54    | 27.5                  | 27.2         | 20.7          | 1.82          | 2.07          | 294        | ----                 |                                |
| 4/3/55                        | 24.0                  | 21.2         | 20.8          | 1.74          | 1.76          | 114        | 0.82                 |                                | 4/3/55      | 29.2                  | 25.8         | 23.8          | 1.93          | 1.96          | 186        | 0.86                 |                                |
| 5/12/55                       | 24.6                  | 20.2         | 22.0          | 1.78          | 1.67          | 139        | 1.00                 |                                | 5/12/55     | 24.8                  | 23.9         | 23.4          | 1.64          | 1.84          | 196        | ----                 |                                |
| 5/31/55                       | 17.3                  | 14.0         | 18.7          | 1.29          | 1.16          | 248        | ----                 |                                | 5/31/55     | 22.3                  | 17.4         | 18.9          | 1.47          | 1.32          | 300        | ----                 |                                |
| Site 92, Greene Co., Iowa     |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| Webster SIL/L (CL)            |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| 7/2/54                        | 37.7                  | 30.0         | 29.0          | 2.62          | 2.27          | 122        | ----                 |                                | 7/3/54      | 36.4                  | 36.0         | 29.7          | 2.40          | 2.68          | 119        | ----                 |                                |
| 7/29/54                       | 13.7                  | 20.7         | 13.6          | 1.41          | 1.56          | 199        | ----                 |                                | 7/29/54     | 21.2                  | 18.2         | 17.5          | 1.40          | 1.35          | 187        | ----                 |                                |
| 8/19/54                       | 33.3                  | 32.4         | 24.6          | 2.38          | 2.45          | 215        | ----                 |                                | 8/19/54     | 25.3                  | 19.6         | 12.8          | 1.65          | 1.46          | 300        | ----                 |                                |
| 9/20/54                       | 24.1                  | 27.6         | 25.5          | 1.72          | 2.09          | 300        | NT                   |                                | 9/21/54     | 33.3                  | 31.9         | 26.8          | 2.20          | 2.37          | 183        | 0.90                 |                                |
| 11/16/54                      | 30.7                  | 31.7         | 29.0          | 2.13          | 2.40          | 202        | ----                 |                                | 11/16/54    | 39.2                  | 32.0         | 27.5          | 2.59          | 2.38          | 131        | ----                 |                                |
| 4/3/55                        | 26.7                  | 26.8         | 24.0          | 1.31          | 2.03          | 2.1        | 1.02                 |                                | 4/3/55      | 36.2                  | 37.1         | 33.3          | 2.52          | 2.76          | 151        | 0.36                 |                                |
| 5/12/55                       | 20.7                  | 13.2         | 22.0          | 1.45          | 1.45          | 291        | NT                   |                                | 5/13/55     | 26.4                  | 27.1         | 23.4          | 1.74          | 2.02          | 199        | NT                   |                                |
| 5/31/55                       | 17.5                  | 17.4         | 13.5          | 1.25          | 1.01          | 300        | ----                 |                                | 5/31/55     | 14.3                  | 17.8         | 17.8          | 0.94          | 1.32          | 280        | ----                 |                                |
| Site 94, Webster Co., Iowa    |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| Clarion L/L (CL)              |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| 7/3/54                        | 17.1                  | 17.3         | 16.7          | 1.50          | 1.59          | 300        | ----                 |                                | 7/3/54      | 34.5                  | 27.9         | 25.8          | 2.50          | 2.31          | 131        | ----                 |                                |
| 7/23/54                       | 12.6                  | 10.5         | 10.1          | 1.11          | 0.37          | 300        | ----                 |                                | 7/23/54     | 23.0                  | 20.1         | 21.5          | 1.67          | 1.66          | 238        | ----                 |                                |
| 8/19/54                       | 34.5                  | 27.7         | 22.6          | 3.04          | 2.75          | 190        | ----                 |                                | 8/19/54     | 28.8                  | 27.6         | 28.0          | 2.09          | 2.28          | 124        | ----                 |                                |
| 9/21/54                       | 15.7                  | 13.4         | 15.6          | 1.66          | 1.69          | 300        | NT                   |                                | 9/21/54     | 24.4                  | 18.9         | 18.4          | 1.77          | 1.50          | 300        | NT                   |                                |
| 11/16/54                      | 21.1                  | 22.4         | 20.5          | 1.36          | 2.06          | 221        | ----                 |                                | 11/16/54    | 34.0                  | 28.3         | 25.8          | 2.47          | 2.38          | 172        | ----                 |                                |
| 4/3/55                        | 21.7                  | 21.9         | 21.1          | 1.91          | 2.01          | 163        | 0.96                 |                                | 4/3/55      | 36.0                  | 29.9         | 28.3          | 2.61          | 2.48          | 149        | 0.80                 |                                |
| 5/13/55                       | 16.0                  | 14.7         | 14.3          | 1.41          | 1.75          | 300        | NT                   |                                | 5/13/55     | 30.5                  | 23.4         | 21.2          | 2.21          | 1.94          | 182        | NT                   |                                |
| 5/31/55                       | 16.4                  | 11.7         | 10.3          | 1.44          | 1.08          | 300        | ----                 |                                | 5/31/55     | 20.9                  | 16.8         | 16.5          | 1.52          | 1.39          | 246        | ----                 |                                |
| Site 95, Humboldt Co., Iowa   |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| Clarion L/L (CL)              |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| 7/3/54                        | ----                  | 19.7         | 21.1          | ----          | 1.47          | 300        | ----                 |                                | 7/3/54      | 22.7                  | 23.1         | 20.3          | 1.61          | 1.69          | 291        | ----                 |                                |
| 7/29/54                       | 15.2                  | 16.4         | 16.4          | 1.08          | 1.21          | 300        | ----                 |                                | 7/29/54     | 15.6                  | 14.2         | 15.7          | 1.10          | 1.04          | 300        | ----                 |                                |
| 8/19/54                       | 22.4                  | 21.4         | 19.7          | 1.60          | 1.58          | 201        | ----                 |                                | 8/19/54     | 22.7                  | 23.8         | 19.0          | 1.60          | 1.74          | 300        | ----                 |                                |
| 9/21/54                       | 20.8                  | 22.1         | 21.5          | 1.48          | 1.63          | 300        | NT                   |                                | 9/21/54     | 20.1                  | 23.6         | 21.3          | 1.42          | 1.73          | 300        | NT                   |                                |
| 11/16/54                      | 22.5                  | 23.8         | 23.7          | 1.61          | 1.76          | 234        | ----                 |                                | 11/16/54    | 23.6                  | 29.5         | 23.4          | 1.67          | 2.16          | 245        | ----                 |                                |
| 4/3/55                        | 22.9                  | 24.4         | 22.2          | 1.64          | 1.80          | 198        | 0.90                 |                                | 4/3/55      | 33.1                  | Frozen       | Frozen        | 2.4           | Frozen        | Frozen     | 0.567                |                                |
| 5/13/55                       | 20.4                  | 20.9         | 20.1          | 1.46          | 1.54          | 246        | 0.92                 |                                | 5/13/55     | 20.8                  | 21.2         | 17.3          | 1.47          | 1.55          | 290        | ----                 |                                |
| 5/31/55                       | 19.9                  | 21.0         | 19.5          | 1.42          | 1.55          | 246        | ----                 |                                | 5/31/55     | 20.1                  | 13.8         | 12.9          | 1.42          | 1.01          | 300        | ----                 |                                |
| Plowed before 4/3/55          |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| Site 96, Kossuth Co., Iowa    |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| Nicolett SIL/L (CL)           |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| 7/3/54                        | 34.3                  | 27.3         | 21.8          | 2.35          | 1.83          | 164        | ----                 |                                | 7/3/54      | 47.4                  | 30.6         | 30.1          | 2.79          | 2.11          | 91         | ----                 |                                |
| 7/29/54                       | 34.1                  | 25.0         | 18.6          | 2.33          | 1.68          | 194        | ----                 |                                | 7/29/54     | 49.6                  | 32.1         | 27.1          | 2.92          | 2.21          | 159        | ----                 |                                |
| 8/19/54                       | 32.7                  | 26.6         | 21.3          | 2.24          | 1.85          | 169        | ----                 |                                | 8/19/54     | 49.2                  | 32.2         | 28.9          | 2.89          | 2.22          | 98         | ----                 |                                |
| 9/21/54                       | 28.9                  | 28.4         | 18.9          | 1.38          | 1.91          | 209        | 0.7                  |                                | 9/21/54     | 36.1                  | 26.9         | 26.4          | 2.12          | 1.86          | 211        | 0.74                 |                                |
| 11/16/54                      | 43.1                  | 39.5         | 32.2          | 2.95          | 2.65          | 160        | ----                 |                                | 11/16/54    | 48.2                  | 32.0         | 31.8          | 2.83          | 2.21          | 144        | ----                 |                                |
| 4/3/55                        | 35.1                  | 29.0         | Frozen        | 2.40          | 1.95          | 182        | 0.86                 |                                | 4/3/55      | 44.8                  | Frozen       | Frozen        | 2.02          | Frozen        | Frozen     | 0.90                 |                                |
| 5/13/55                       | 27.7                  | 25.7         | 20.5          | 1.89          | 1.73          | 210        | NT                   |                                | 5/13/55     | 38.2                  | 28.7         | 26.9          | 2.27          | 1.98          | 181        | 0.90                 |                                |
| 5/31/55                       | 24.2                  | 16.9         | 13.4          | 1.65          | 1.14          | 300        | ----                 |                                | 5/31/55     | 31.4                  | 25.2         | 25.4          | 1.85          | 1.74          | 216        | ----                 |                                |
| Site 102, Freeborn Co., Minn. |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| Unclassified SIL/SIL (CL)     |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| 7/3/54                        | 26.4                  | 25.0         | 22.4          | 1.85          | 2.06          | 180        | ----                 |                                | 7/3/54      | 25.4                  | 16.8         | 14.6          | 1.72          | 1.43          | 300        | ----                 |                                |
| 7/29/54                       | 25.0                  | 16.0         | 17.0          | 1.76          | 1.39          | 300        | ----                 |                                | 7/29/54     | 17.1                  | 9.9          | 9.7           | 1.29          | 0.84          | 300        | ----                 |                                |
| 8/19/54                       | 13.5                  | 15.5         | 14.5          | 1.37          | 1.28          | 300        | ----                 |                                | 8/19/54     | 20.2                  | 12.4         | 9.5           | 1.37          | 1.06          | 300        | ----                 |                                |
| 9/22/54                       | 28.2                  | 26.4         | 23.3          | 1.98          | 2.17          | 162        | 0.75                 |                                | 9/22/54     | 25.5                  | 28.0         | 16.3          | 1.73          | 2.38          | 229        | 0.86                 |                                |
| 11/17/54                      | 34.9                  | 29.2         | 24.0          | 2.45          | 2.40          | 172        | ----                 |                                | 11/17/54    | 26.0                  | 18.7         | 16.9          | 1.76          | 1.59          | 229        | ----                 |                                |
| 4/4/55                        | 33.1                  | 28.4         | 23.2          | 2.32          | 2.33          | 160        | 0.78                 |                                | 4/4/55      | 25.1                  | 13.5         | 16.6          | 1.70          | 1.66          | 228        | 0.78                 |                                |
| 5/13/55                       | 21.7                  | 20.2         | 19.1          | 1.52          | 1.66          | 270        | ----                 |                                | 5/13/55     | 22.5                  | 15.0         | 13.6          | 1.52          | 1.28          | 300        | NT                   |                                |
| 5/30/55                       | 23.7                  | 14.6         | 13.7          | 1.66          | 1.20          | 294        | ----                 |                                | 5/30/55     | 21.7                  | 10.4         | 11.2          | 1.47          | 0.89          | 300        | ----                 |                                |
| Site 104, Waseco Co., Minn.   |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| Webster L/L (NL)              |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| 7/4/54                        | 30.3                  | 30.4         | 29.0          | 2.07          | 2.23          | 209        | ----                 |                                | 7/4/54      | 40.7                  | 25.3         | 22.4          | 2.59          | 2.03          | 151        | ----                 |                                |
| 7/29/54                       | 24.8                  | 17.5         | 18.6          | 1.70          | 1.28          | 300        | ----                 |                                | 7/29/54     | 30.1                  | 13.6         | 14.6          | 1.28          | 1.09          | 300        | ----                 |                                |
| 8/19/54                       | 27.9                  | 24.6         | 20.0          | 1.91          | 1.80          | 300        | ----                 |                                | 8/19/54     | 28.6                  | 18.8         | 16.1          | 1.82          | 1.51          | 263        | ----                 |                                |
| 9/22/54                       | 31.8                  | 30.1         | 24.7          | 2.18          | 2.20          | 285        | NT                   |                                | 9/22/54     | 37.1                  | 26.5         | 23.3          | 2.45          | 2.13          | 173        | 0.92                 |                                |
| 11/17/54                      | 31.2                  | 31.7         | 27.6          | 2.13          | 2.32          | 300        | ----                 |                                | 11/17/54    | 37.5                  | 24.5         | 23.4          | 2.38          | 1.97          | 183        | ----                 |                                |
| 4/4/55                        | 36.0                  | 31.6         | 28.3          | 2.52          | 2.31          | 284        | NT                   |                                | 4/4/55      | 38.3                  | 27.7         | 23.7          | 2.44          | 2.23          | 173        | 0.67                 |                                |
| 5/12/55                       | 21.9                  | 22.3         | 22.6          | 1.50          | 1.63          | 300        | ----                 |                                | 5/13/55     | 26.3                  | 17.8         | 18.1          | 1.67          | 1.43          | 300        | ----                 |                                |
| 5/30/55                       | 23.8                  | 17.2         | 18.0          | 1.63          | 1.26          | 300        | ----                 |                                | 5/30/55     | 22.9                  | 13.7         | 13.7          | 1.46          | 1.08          | 300        | ----                 |                                |
| Site 105, Waseco Co., Minn.   |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| Clarion L/L (CL)              |                       |              |               |               |               |            |                      |                                |             |                       |              |               |               |               |            |                      |                                |
| 7/4/54                        | 30.3                  | 30.4         | 29.0          | 2.07          | 2.23          | 209        | ----                 |                                | 7/4/54      | 40.7                  | 25.3         | 22.4          | 2.59          | 2.03          | 151        | ----                 |                                |
| 7/29/54                       | 24.8                  | 17.5         | 18.6          | 1.70          | 1.28          | 300        | ----                 |                                | 7/29/54     | 30.1                  | 13.6         | 14.6          | 1.28          | 1.09          | 300        | ----                 |                                |
| 8/19/54                       | 27.9                  | 24.6         | 20.0          | 1.91          | 1.80          | 300        | ----                 |                                | 8/19/54     | 28.6                  | 18.8         | 16.1          | 1.82          | 1.51          | 263        | ----                 |                                |
| 9/22/54                       | 31.8                  | 30.1         | 24.7          | 2.18          | 2.20          | 285        | NT                   |                                | 9/22/54     | 37.1                  | 26.5         | 23.3          | 2.45          | 2.13          | 173        | 0.92                 |                                |
| 11/17/54                      | 31.2                  | 31.7         | 27.6          | 2.13          | 2.32          | 300        | ----                 |                                | 11/17/54    | 37.5                  | 24.5         | 23.4          | 2.38          | 1.97          | 183        | ----                 |                                |
| 4/4/55                        | 36.0                  | 31.6         | 28.3          | 2.52          | 2.31          | 284        | NT                   |                                | 4/4/55      | 38.3                  | 27.7         | 23.7          | 2.44          | 2.23          | 173        | 0.67                 |                                |
| 5/12/55                       | 21.9                  | 22.3         | 22.6          | 1.50          | 1.63          | 300        | ----                 |                                | 5/13/55     | 26.3                  | 17.8         | 18.1          | 1.67          | 1.43          | 300        | ----                 |                                |
| 5/30/55                       | 23.8                  | 17.2         | 18.0          | 1.63          | 1.26          | 300        | ----                 |                                | 5/30/55     | 22.9                  | 13.7         | 13.7          | 1.46          | 1.08          | 300        | ----                 |                                |



Table B3c (Continued)  
Lake States Region (Continued)

| Sample Date   | Soil Moisture Content |              |               |             |              |               | Cone Index | Remold- ing Index | Depth to Water Table in. | Sample Date | Soil Moisture Content |              |               |             |              |               | Cone Index | Remold- ing Index | Depth to Water Table in. |
|---|-----------------------|--------------|---------------|-------------|--------------|---------------|------------|-------------------|--------------------------|-------------|-----------------------|--------------|---------------|-------------|--------------|---------------|------------|-------------------|--------------------------|
|   | Percent Weight Basis  |              |               |             |              |               |            |                   |                          |             | Percent Weight Basis  |              |               |             |              |               |            |                   |                          |
|   | 0- to 6-in.           | 6- to 12-in. | 12- to 18-in. | 0- to 6-in. | 6- to 12-in. | 12- to 18-in. |            |                   |                          |             | 0- to 6-in.           | 6- to 12-in. | 12- to 18-in. | 0- to 6-in. | 6- to 12-in. | 12- to 18-in. |            |                   |                          |
| Site 106, Dakota Co., Minn.<br>Ester SL/SL (SM)       |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 7/4/54  | 12.0                  | 14.7         | 16.5          | 1.03        | 1.23         | 124           | ----       | ----              | ----                     | 7/4/54      | 56.2                  | 36.2         | 29.6          | 3.00        | 2.52         | 101           | ----       | ----              |                          |
| 7/29/54   | 4.2                   | 5.3          | 3.9           | 0.38        | 0.70         | 300           | ----       | ----              | ----                     | 7/29/54     | 46.2                  | 28.5         | 22.8          | 2.47        | 1.98         | 123           | ----       | ----              |                          |
| 8/15/54   | 6.3                   | 7.4          | 7.5           | 0.62        | 0.62         | 300           | ----       | ----              | ----                     | 8/15/54     | 48.5                  | 30.2         | 21.4          | 2.59        | 2.10         | 136           | ----       | ----              |                          |
| 9/22/54   | 20.3                  | 13.7         | 17.2          | 1.83        | 1.15         | 188           | NT         | ----              | ----                     | 9/22/54     | 55.0                  | 40.7         | 33.8          | 2.94        | 2.83         | 120           | 0.87       | ----              |                          |
| 11/13/54  | 10.5                  | 13.7         | 15.7          | 0.34        | 1.15         | 170           | ----       | ----              | ----                     | 11/13/54    | 56.9                  | 38.5         | 34.6          | 3.04        | 2.68         | 144           | ----       | ----              |                          |
| 4/5/55  | 14.0                  | 16.3         | 16.2          | 1.26        | 1.37         | 110           | 0.96       | ----              | ----                     | 4/5/55      | Frozen                |              |               |             |              |               | ----       | ----              | ----                     |
| 5/14/55   | 5.0                   | 7.3          | 11.6          | 0.45        | 0.66         | 300           | ----       | ----              | ----                     | 5/14/55     | 46.4                  | 31.9         | 28.0          | 2.48        | 2.22         | 132           | 0.39       | ----              |                          |
| 5/30/55   | 1.5                   | 5.9          | 6.5           | 0.76        | 0.50         | 300           | ----       | ----              | ----                     | 5/30/55     | 42.1                  | 36.3         | 26.3          | 2.25        | 2.56         | 131           | ----       | ----              |                          |
| Site 108, St. Croix Co., Wis.<br>Jewette SIL/L (CL-M) |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/3/54  | 22.6                  | 20.1         | 25.4          | 1.38        | 1.79         | 150           | ----       | ----              | ----                     | 6/3/54      | 31.3                  | 29.6         | 32.5          | 1.97        | 2.15         | 135           | ----       | ----              |                          |
| 7/30/54   | 12.9                  | 13.1         | 15.3          | 1.13        | 1.17         | 300           | ----       | ----              | ----                     | 7/30/54     | 22.8                  | 21.7         | 19.6          | 1.44        | 1.58         | 194           | ----       | ----              |                          |
| 8/20/54   | 14.7                  | 13.2         | 14.8          | 1.29        | 1.18         | 300           | ----       | ----              | ----                     | 8/20/54     | 29.8                  | 25.9         | 21.5          | 1.86        | 1.88         | 139           | ----       | ----              |                          |
| 9/22/54   | 21.1                  | 18.8         | 19.6          | 1.85        | 1.68         | 172           | 0.73       | ----              | ----                     | 9/22/54     | 29.3                  | 24.0         | ----          | 1.85        | 1.74         | 115           | 0.37       | ----              |                          |
| 11/18/54  | 22.9                  | 18.2         | 17.6          | 2.01        | 1.64         | 184           | ----       | ----              | ----                     | 11/18/54    | 31.0                  | 28.2         | 23.1          | 1.95        | 2.05         | 212           | ----       | ----              |                          |
| 4/5/55  | 25.9                  | 20.7         | 21.7          | 2.27        | 1.85         | 131           | 0.80       | ----              | ----                     | 4/5/55      | 29.5                  | 30.6         | 25.4          | 1.86        | 2.22         | 174           | 0.42       | ----              |                          |
| 5/14/55   | 19.5                  | 18.2         | 12.5          | 1.71        | 1.63         | 205           | 0.92       | ----              | ----                     | 5/14/55     | 13.4                  | 18.4         | 20.4          | 0.84        | 1.34         | 263           | ----       | ----              |                          |
| 6/3/55  | 21.6                  | 19.4         | 18.9          | 1.89        | 1.73         | 188           | ----       | ----              | ----                     | 6/3/55      | 24.2                  | 21.3         | 18.8          | 1.52        | 1.55         | 189           | ----       | ----              |                          |
| plowed before 5/14/55                                 |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Site 110, St. Croix Co., Wis.<br>Dakota L/L (CL-M)    |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/3/54  | 19.5                  | 12.8         | 24.0          | 1.87        | 1.35         | 183           | ----       | ----              | ----                     | 6/3/54      | 18.0                  | 15.4         | 20.9          | 1.40        | 1.52         | 107           | ----       | ----              |                          |
| 7/30/54   | 10.5                  | 3.7          | 12.4          | 1.01        | 0.95         | 300           | ----       | ----              | ----                     | 7/30/54     | 10.8                  | 8.0          | 7.6           | 0.84        | 0.79         | 131           | ----       | ----              |                          |
| 8/20/54   | 11.2                  | 7.9          | 6.2           | 1.07        | 0.77         | 211           | ----       | ----              | ----                     | 8/20/54     | 10.5                  | 9.4          | 10.8          | 0.82        | 0.93         | 300           | ----       | ----              |                          |
| 9/23/54   | 16.4                  | 16.2         | 16.7          | 1.57        | 1.59         | 300           | 0.98       | ----              | ----                     | 9/23/54     | 23.0                  | 13.5         | 11.7          | 1.79        | 1.3          | 139           | NT         | ----              |                          |
| 11/18/54  | 15.5                  | 15.1         | 17.5          | 1.49        | 1.48         | 300           | ----       | ----              | ----                     | 11/18/54    | 14.0                  | 15.4         | 21.5          | 1.09        | 1.53         | 138           | ----       | ----              |                          |
| 4/5/55  | 18.4                  | 15.0         | 16.9          | 1.77        | 1.47         | 193           | 0.59       | ----              | ----                     | 4/5/55      | 34.1                  | 21.1         | 17.1          | 2.66        | 2.09         | 125           | 0.55       | ----              |                          |
| 5/14/55   | 7.4                   | 8.2          | 13.3          | 0.71        | 0.80         | 300           | ----       | ----              | ----                     | 5/14/55     | 21.6                  | 13.5         | 12.6          | 1.68        | 1.34         | 187           | NT         | ----              |                          |
| 6/3/55  | 12.5                  | 7.4          | 9.9           | 1.20        | 0.73         | 500           | ----       | ----              | ----                     | 6/3/55      | 18.3                  | 12.0         | 10.4          | 1.43        | 1.19         | 160           | ----       | ----              |                          |
| Site 112, Polk Co., Wis.<br>Spencer SIL/SIL (CL)      |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/4/54  | 31.1                  | 22.3         | 29.5          | 2.20        | 1.95         | 178           | ----       | ----              | ----                     | 6/4/54      | 24.8                  | 27.6         | 29.7          | 2.13        | 2.20         | 169           | ----       | ----              |                          |
| 7/30/54   | 23.1                  | 14.1         | 16.8          | 1.64        | 1.24         | 300           | ----       | ----              | ----                     | 7/30/54     | 18.8                  | 14.4         | 17.2          | 1.57        | 1.15         | 300           | ----       | ----              |                          |
| 8/20/54   | 23.2                  | 14.7         | 17.4          | 1.64        | 1.29         | 300           | ----       | ----              | ----                     | 8/20/54     | 14.6                  | 12.7         | 9.4           | 1.22        | 1.01         | 300           | ----       | ----              |                          |
| 9/23/54   | 34.8                  | 21.1         | 21.1          | 2.46        | 1.34         | 182           | 0.58       | ----              | ----                     | 9/23/54     | 25.5                  | 24.1         | 21.5          | 2.15        | 1.92         | 258           | 0.71       | ----              |                          |
| 11/18/54  | 35.0                  | 21.4         | 22.1          | 2.34        | 1.87         | 216           | ----       | ----              | ----                     | 11/18/54    | 28.8                  | 23.6         | 24.3          | 2.40        | 1.88         | 243           | ----       | ----              |                          |
| 4/5/55  | Flooded               |              |               |             |              |               | 186        | ----              | ----                     | 4/5/55      | Flooded               |              |               |             |              |               | 237        | ----              | ----                     |
| 5/14/55   | 21.3                  | 15.2         | 17.7          | 1.51        | 1.33         | 300           | ----       | ----              | ----                     | 5/14/55     | 15.0                  | 17.2         | 19.7          | 1.25        | 1.37         | 300           | ----       | ----              |                          |
| 6/3/55  | 22.2                  | 13.9         | 13.2          | 1.57        | 1.22         | 300           | ----       | ----              | ----                     | 6/3/55      | 18.9                  | 14.0         | 14.5          | 1.58        | 1.14         | 300           | ----       | ----              |                          |
| Site 114, Rusk Co., Wis.<br>Unclassified SIL/SIL (CL) |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/4/54  | 33.8                  | 28.9         | 31.2          | 2.23        | 2.27         | 217           | ----       | ----              | ----                     | 6/4/54      | 24.6                  | 21.2         | 25.2          | 1.56        | 1.70         | 101           | ----       | ----              |                          |
| 7/30/54   | 33.0                  | 17.3         | 16.0          | 2.18        | 1.15         | 300           | ----       | ----              | ----                     | 7/30/54     | 29.6                  | 14.6         | 13.1          | 1.88        | 1.17         | 202           | ----       | ----              |                          |
| 8/20/54   | 19.1                  | 16.2         | 17.5          | 1.26        | 1.21         | 300           | ----       | ----              | ----                     | 8/20/54     | 12.5                  | 9.9          | 7.7           | 0.80        | 0.80         | 180           | ----       | ----              |                          |
| 9/23/54   | 36.4                  | 26.0         | 23.2          | 2.40        | 2.0          | 198           | 0.59       | ----              | ----                     | 9/23/54     | 22.5                  | 20.3         | 16.4          | 1.43        | 1.63         | 168           | NT         | ----              |                          |
| 11/18/54  | 32.2                  | 23.4         | 22.1          | 2.12        | 1.84         | 220           | ----       | ----              | ----                     | 11/18/54    | 25.2                  | 23.3         | 11.5          | 1.60        | 1.79         | 149           | ----       | ----              |                          |
| 5/14/55   | 20.0                  | 20.1         | 23.3          | 1.32        | 1.58         | 300           | ----       | ----              | ----                     | 5/14/55     | 27.4                  | 20.1         | 17.6          | 1.74        | 1.62         | 190           | NT         | ----              |                          |
| 5/20/55   | 19.8                  | 17.5         | 16.2          | 1.31        | 1.38         | 300           | NT         | ----              | ----                     | 5/20/55     | 23.2                  | 20.8         | 19.6          | 1.48        | 1.67         | 168           | ----       | ----              |                          |
| 6/8/55  | 21.5                  | 18.1         | 16.4          | 1.42        | 1.48         | 254           | ----       | ----              | ----                     | 6/8/55      | 29.8                  | 25.2         | 21.0          | 1.90        | 2.03         | 134           | ----       | ----              |                          |
| Site 116, Rusk Co., Wis.<br>Unclassified SIL/SIL (CL) |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 5/4/54  | 16.9                  | 15.5         | 12.2          | 1.38        | 1.37         | 248           | ----       | ----              | ----                     | 5/4/54      | 31.3                  | 24.5         | 23.7          | 1.99        | 2.07         | 155           | ----       | ----              |                          |
| 7/30/54   | 11.9                  | 7.6          | 6.5           | 0.90        | 0.57         | 300           | ----       | ----              | ----                     | 7/30/54     | 33.7                  | 16.5         | 12.4          | 1.80        | 1.40         | 224           | ----       | ----              |                          |
| 8/20/54   | 3.0                   | 8.1          | 6.8           | 0.68        | 0.71         | 300           | ----       | ----              | ----                     | 8/20/54     | 25.1                  | 14.1         | 12.6          | 1.39        | 1.19         | 300           | ----       | ----              |                          |
| 9/23/54   | 16.2                  | 15.6         | 10.7          | 1.26        | 1.32         | 252           | NT         | ----              | ----                     | 9/23/54     | 37.7                  | 24.3         | 19.3          | 2.01        | 2.06         | 156           | 0.26       | ----              |                          |
| 11/13/54  | 15.7                  | 22.6         | 12.5          | 1.19        | 1.99         | 300           | ----       | ----              | ----                     | 11/13/54    | 37.7                  | 22.2         | 18.1          | 2.01        | 1.88         | 119           | ----       | ----              |                          |
| 4/5/55  | 26.4                  | 15.9         | 13.3          | 1.54        | 1.40         | 239           | 0.62       | ----              | ----                     | 4/5/55      | 40.3                  | 23.4         | 19.0          | 2.15        | 1.98         | 263           | NT         | ----              |                          |
| 5/14/55   | 7.4                   | 9.2          | 7.3           | 0.46        | 0.81         | 300           | ----       | ----              | ----                     | 5/14/55     | 54.8                  | 22.2         | 17.9          | 2.93        | 1.88         | 125           | ----       | ----              |                          |
| 6/4/55  | 14.5                  | 13.2         | 11.0          | 1.10        | 1.16         | 300           | ----       | ----              | ----                     |             |                       |              |               |             |              |               |            |                   |                          |
| Site 118, Oneida Co., Wis.<br>Plainfield SIL/SL (SM)  |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 5/1/54  | 24.3                  | 17.6         | 29.4          | 1.53        | 1.13         | 75            | ----       | ----              | ----                     | 5/1/54      | 29.7                  | 21.7         | 25.0          | 1.80        | 1.56         | 136           | ----       | ----              |                          |
| 8/3/54  | 11.4                  | 8.3          | 5.6           | 0.72        | 0.53         | 156           | ----       | ----              | ----                     | 8/3/54      | 15.7                  | 10.2         | 7.1           | 0.95        | 0.73         | 300           | ----       | ----              |                          |
| 8/23/54   | 19.8                  | 13.9         | 8.5           | 1.25        | 0.89         | 71            | ----       | ----              | ----                     | 8/23/54     | 25.2                  | 18.1         | 7.2           | 1.53        | 1.30         | 215           | ----       | ----              |                          |
| 9/27/54   | 14.4                  | 12.1         | 19.8          | 0.91        | 0.59         | 169           | NT         | ----              | ----                     | 9/27/54     | 21.9                  | 17.3         | 15.8          | 1.33        | 1.25         | 135           | 0.71       | ----              |                          |
| 10/26/54  | 16.3                  | 13.8         | 12.2          | 1.03        | 0.89         | 139           | ----       | ----              | ----                     | 10/26/54    | 27.7                  | 13.1         | 13.3          | 1.38        | 1.32         | 142           | ----       | ----              |                          |
| 4/13/55   | 27.9                  | 20.6         | 12.8          | 1.75        | 1.32         | 104           | 0.60       | ----              | ----                     | 4/13/55     | 28.6                  | 21.0         | 16.3          | 1.73        | 1.57         | 136           | 0.52       | ----              |                          |
| 5/16/55   | 9.2                   | 11.6         | 8.3           | 0.58        | 0.74         | 198           | 1.71*      | ----              | ----                     | 5/16/55     | 26.2                  | 22.3         | 16.3          | 1.59        | 1.60         | 199           | 1.19*      | ----              |                          |
| 6/5/55  | 18.5                  | 13.6         | 11.6          | 1.16        | 0.87         | 153           | ----       | ----              | ----                     | 6/5/55      | 27.5                  | 19.5         | 15.6          | 1.67        | 1.40         | 142           | ----       | ----              |                          |
| Site 119, Oneida Co., Wis.<br>Vilas SIL/SL (SM)       |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 5/1/54  | 24.3                  | 17.6         | 29.4          | 1.53        | 1.13         | 75            | ----       | ----              | ----                     | 5/1/54      | 29.7                  | 21.7         | 25.0          | 1.80        | 1.56         | 136           | ----       | ----              |                          |
| 8/3/54  | 11.4                  | 8.3          | 5.6           | 0.72        | 0.53         | 156           | ----       | ----              | ----                     | 8/3/54      | 15.7                  | 10.2         | 7.1           | 0.95        | 0.73         | 300           | ----       | ----              |                          |
| 8/23/54   | 19.8                  | 13.9         | 8.5           | 1.25        | 0.89         | 71            | ----       | ----              | ----                     | 8/23/54     | 25.2                  | 18.1         | 7.2           | 1.53        | 1.30         | 215           | ----       | ----              |                          |
| 9/27/54   | 14.4                  | 12.1         | 19.8          | 0.91        | 0.59         |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |



Table B3c (Continued)  
Lake States Region (Continued)

| Sample Date   | Soil Moisture Content   |                          |                           |                         |                          | Cone Index | Remold-<br>ing Index | Depth to<br>Water | Sample Date | Soil Moisture Content   |                          |                           |                         |                          | Cone Index | Remold-<br>ing Index | Depth to<br>Water |
|---|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|------------|----------------------|-------------------|-------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|------------|----------------------|-------------------|
|   | Percent Weight Basis    |                          |                           |                         |                          |            |                      |                   |             | Percent Weight Basis    |                          |                           |                         |                          |            |                      |                   |
|   | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth |            |                      |                   |             | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth |            |                      |                   |
| Site 120, Oneida Co., Wis.<br>Plainfield LS/LS (SM)       |                         |                          |                           |                         |                          |            |                      |                   |             |                         |                          |                           |                         |                          |            |                      |                   |
| 6/1/54  | 20.0                    | 14.2                     | 22.2                      | 1.31                    | 1.04                     | 99         | ----                 |                   | 6/1/54      | 36.0                    | 33.3                     | 38.8                      | 1.24                    | 2.08                     | 126        | ----                 |                   |
| 8/3/54  | 13.1                    | 12.3                     | 7.7                       | 1.13                    | 0.86                     | 117        | ----                 |                   | 8/3/54      | 21.2                    | 18.5                     | 15.0                      | 1.14                    | 1.15                     | 160        | ----                 |                   |
| 8/23/54   | 13.1                    | 10.4                     | 6.9                       | 0.96                    | 0.72                     | 132        | ----                 |                   | 8/23/54     | 19.0                    | 13.4                     | 9.8                       | 1.03                    | 0.84                     | 164        | ----                 |                   |
| 9/27/54   | 15.4                    | 11.2                     | 25.2                      | 1.01                    | 0.78                     | 110        | 1.46                 |                   | 9/27/54     | 23.9                    | 20.7                     | 18.3                      | 1.29                    | 1.29                     | 144        | NT                   |                   |
| 10/26/54  | 3.8                     | 10.2                     | 9.0                       | 0.64                    | 0.71                     | 146        | ----                 |                   | 10/26/54    | 30.7                    | 24.4                     | 20.8                      | 1.66                    | 1.52                     | 154        | ----                 |                   |
| 4/13/55   | 21.0                    | 13.7                     | 11.4                      | 1.37                    | 0.95                     | 136        | 1.31*                |                   | 4/13/55     | 35.3                    | 25.3                     | 22.4                      | 1.91                    | 1.58                     | 149        | NT                   |                   |
| 5/16/55   | 16.1                    | 11.0                     | 8.9                       | 1.05                    | 0.81                     | 118        | ----                 |                   | 5/16/55     | 23.1                    | 20.0                     | 17.0                      | 1.25                    | 1.25                     | 156        | ----                 |                   |
| 6/5/55  | 16.8                    | 12.0                     | 10.1                      | 1.10                    | 0.84                     | 112        | ----                 |                   | 6/5/55      | 22.9                    | 19.9                     | 17.1                      | 1.24                    | 1.24                     | 154        | ----                 |                   |
| Site 122, Price Co., Wis.<br>Kannan SL/SL (ML)            |                         |                          |                           |                         |                          |            |                      |                   |             |                         |                          |                           |                         |                          |            |                      |                   |
| 6/1/54  | 37.1                    | 35.2                     | 38.2                      | 2.47                    | 2.52                     | 139        | ----                 |                   | 7/12/54     | 41.0                    | 28.3                     | 21.3                      | 2.51                    | 2.31                     | 202        | ----                 |                   |
| 8/3/54  | 34.2                    | 30.6                     | 23.6                      | 2.32                    | 2.15                     | 178        | ----                 |                   | 8/3/54      | 38.3                    | 21.7                     | 16.2                      | 2.34                    | 1.77                     | 223        | ----                 |                   |
| 8/23/54   | 34.8                    | 31.2                     | 23.8                      | 2.32                    | 2.24                     | 131        | ----                 |                   | 8/23/54     | 42.6                    | 22.3                     | 16.8                      | 2.61                    | 1.82                     | 264        | ----                 |                   |
| 9/27/54   | 36.7                    | 30.2                     | 34.5                      | 2.44                    | 2.17                     | 173        | 0.67                 |                   | 10/4/54     | 48.2                    | ----                     | 21.8                      | 2.95                    | ----                     | 185        | 0.49                 | 12                |
| 10/26/54  | 23.2                    | 27.5                     | 13.3                      | 1.34                    | 1.93                     | 153        | ----                 |                   | 10/26/54    | 42.7                    | 34.2                     | 29.0                      | 2.61                    | 2.79                     | 137        | ----                 |                   |
| 4/13/55   | 35.5                    | 35.6                     | 29.0                      | 2.36                    | 2.50                     | 131        | 0.53                 |                   | 4/13/55     | 37.3                    | FW                       | FW                        | 2.28                    | FW                       | 148        | ----                 | 6                 |
| 5/16/55   | 31.1                    | 32.1                     | 21.2                      | 2.07                    | 2.25                     | 211        | 0.62                 |                   | 5/16/55     | 32.1                    | 34.6                     | 23.2                      | 1.96                    | 2.82                     | 139        | 0.30                 |                   |
| 6/5/55  | 31.2                    | 30.6                     | 21.2                      | 2.12                    | 2.15                     | 189        | ----                 |                   | 6/5/55      | 30.6                    | 25.9                     | 21.5                      | 1.87                    | 2.11                     | 170        | ----                 |                   |
| Site 124, Bayfield Co., Wis.<br>Ontonagon L/C (CH)        |                         |                          |                           |                         |                          |            |                      |                   |             |                         |                          |                           |                         |                          |            |                      |                   |
| 7/12/54   | 32.2                    | 29.1                     | 28.2                      | 2.35                    | 2.39                     | 201        | ----                 |                   | 7/12/54     | 31.1                    | 21.1                     | 26.4                      | 1.96                    | 1.81                     | 300        | ----                 |                   |
| 8/3/54  | 23.2                    | 22.8                     | 23.4                      | 1.71                    | 1.87                     | 300        | ----                 |                   | 8/3/54      | 16.4                    | 21.1                     | 25.2                      | 1.03                    | 1.81                     | 300        | ----                 |                   |
| 8/23/54   | 22.7                    | 19.4                     | 21.6                      | 1.62                    | 1.53                     | 300        | ----                 |                   | 8/23/54     | 18.8                    | 16.5                     | 18.5                      | 1.18                    | 1.42                     | 300        | ----                 |                   |
| 10/4/54   | 23.2                    | 22.7                     | 22.0                      | 2.01                    | 1.56                     | 155        | NT                   |                   | 10/4/54     | 19.5                    | 24.6                     | 24.1                      | 1.23                    | 2.11                     | 268        | NT                   |                   |
| 10/27/54  | 32.2                    | 27.7                     | 22.0                      | 2.30                    | 2.27                     | 203        | ----                 |                   | 10/27/54    | 37.5                    | 24.0                     | 23.7                      | 2.36                    | 2.06                     | 161        | ----                 |                   |
| 4/13/55   | FW                      | FW                       | FW                        | FW                      | FW                       | 153        | ----                 | 0                 | 4/13/55     | FW                      | FW                       | FW                        | FW                      | FW                       | 147        | ----                 | 0                 |
| 5/16/55   | 34.5                    | 30.2                     | 25.2                      | 2.46                    | 2.48                     | 206        | NT                   |                   | 5/16/55     | 23.5                    | 24.2                     | 25.2                      | 1.48                    | 2.08                     | 225        | NT                   |                   |
| 6/5/55  | 26.5                    | 19.0                     | 24.5                      | 1.83                    | 1.56                     | 285        | ----                 |                   | 6/5/55      | 24.9                    | 24.1                     | 28.2                      | 1.57                    | 2.07                     | 172        | ----                 |                   |
| Site 126, Aitkin Co., Minn.<br>Unclassified SIL/SIL (ML)  |                         |                          |                           |                         |                          |            |                      |                   |             |                         |                          |                           |                         |                          |            |                      |                   |
| 7/13/54   | 33.7                    | 23.4                     | 13.1                      | 2.12                    | 1.32                     | 184        | ----                 |                   | 7/13/54     | 35.0                    | 27.0                     | 24.7                      | 2.46                    | 2.12                     | 123        | ----                 |                   |
| 8/4/54  | 27.2                    | 15.3                     | 13.1                      | 1.75                    | 1.26                     | 271        | ----                 |                   | 8/4/54      | 29.6                    | 21.3                     | 12.0                      | 2.08                    | 1.67                     | 206        | ----                 |                   |
| 9/24/54   | 23.3                    | 15.3                     | 11.6                      | 1.47                    | 1.26                     | 271        | ----                 |                   | 9/24/54     | 21.2                    | 13.3                     | 13.6                      | 1.49                    | 1.05                     | 248        | ----                 |                   |
| 10/5/54   | 23.0                    | 9.5                      | 7.0                       | 1.45                    | 0.75                     | 291        | NT                   |                   | 10/5/54     | 26.5                    | 16.5                     | 13.2                      | 1.86                    | 1.30                     | 217        | NT                   |                   |
| 10/27/54  | 25.2                    | 13.7                     | 12.2                      | 1.63                    | 1.13                     | 275        | ----                 |                   | 10/27/54    | 25.0                    | 17.8                     | 14.4                      | 1.76                    | 1.40                     | 228        | ----                 |                   |
| 4/20/55   | 32.1                    | 21.2                     | 13.6                      | 2.02                    | 1.74                     | 245        | NT                   |                   | 4/20/55     | 38.1                    | 28.6                     | 26.3                      | 2.67                    | 2.25                     | 134        | 0.35                 |                   |
| 5/17/55   | 35.7                    | 21.2                     | 22.3                      | 2.25                    | 1.80                     | 256        | NT                   |                   | 5/17/55     | 31.1                    | 23.3                     | 21.8                      | 2.18                    | 1.93                     | 127        | 0.49                 |                   |
| 6/6/55  | 35.9                    | 23.1                     | 23.4                      | 2.26                    | 1.20                     | 181        | ----                 |                   | 6/6/55      | 36.4                    | 30.0                     | 29.9                      | 2.56                    | 2.36                     | 69         | ----                 |                   |
| Site 128, Cass Co., Minn.<br>Unclassified SIL/SIL (CL-ML) |                         |                          |                           |                         |                          |            |                      |                   |             |                         |                          |                           |                         |                          |            |                      |                   |
| 7/13/54   | 37.4                    | 15.1                     | 16.2                      | 2.26                    | 1.18                     | 274        | ----                 |                   | 7/13/54     | 29.3                    | 25.7                     | 24.3                      | 2.02                    | 2.13                     | 211        | ----                 |                   |
| 8/4/54  | 31.2                    | 13.4                     | 4.1                       | 1.89                    | 1.04                     | 263        | ----                 |                   | 8/4/54      | 16.4                    | 20.4                     | 20.8                      | 1.13                    | 1.69                     | 300        | ----                 |                   |
| 9/24/54   | 31.2                    | 13.4                     | 4.1                       | 1.89                    | 1.04                     | 263        | ----                 |                   | 9/24/54     | 15.4                    | 18.6                     | 18.2                      | 1.06                    | 1.54                     | 300        | ----                 |                   |
| 10/5/54   | 36.0                    | 15.2                     | 10.3                      | 2.18                    | 1.18                     | 282        | NT                   |                   | 10/5/54     | 22.7                    | 20.0                     | 17.0                      | 1.57                    | 1.66                     | 300        | NT                   |                   |
| 10/27/54  | 40.7                    | 22.4                     | 17.6                      | 2.47                    | 1.75                     | 172        | ----                 |                   | 10/27/54    | 23.2                    | 22.6                     | 22.2                      | 1.60                    | 1.87                     | 285        | ----                 |                   |
| 4/20/55   | Flooded                 | Flooded                  | Flooded                   | Flooded                 | Flooded                  | 193        | ----                 | Flooded           | 4/20/55     | 28.2                    | 26.0                     | 27.7                      | 1.99                    | 2.15                     | 220        | NT                   |                   |
| 5/17/55   | FW                      | FW                       | FW                        | FW                      | FW                       | 147        | NT                   | 6                 | 5/17/55     | 23.8                    | 19.7                     | 22.1                      | 1.64                    | 1.63                     | 272        | NT                   |                   |
| 6/6/55  | Flooded                 | Flooded                  | Flooded                   | Flooded                 | Flooded                  | 174        | ----                 | Flooded           | 6/6/55      | 27.5                    | 23.9                     | 23.6                      | 1.30                    | 1.98                     | 212        | NT                   |                   |
| Site 130, Hubbard Co., Minn.<br>Hubbard SL/SL (SM)        |                         |                          |                           |                         |                          |            |                      |                   |             |                         |                          |                           |                         |                          |            |                      |                   |
| 7/13/54   | 9.7                     | 7.2                      | 5.0                       | 0.64                    | 0.60                     | 300        | ----                 |                   | 7/13/54     | 4.8                     | 6.1                      | 4.3                       | 0.43                    | 0.55                     | 300        | ----                 |                   |
| 8/4/54  | 10.5                    | 6.4                      | 0.2                       | 0.77                    | 0.54                     | 300        | ----                 |                   | 8/4/54      | 4.1                     | 2.5                      | 4.1                       | 0.37                    | 0.22                     | 300        | ----                 |                   |
| 8/24/54   | 11.2                    | 0.9                      | 3.2                       | 0.82                    | 0.50                     | 300        | ----                 |                   | 8/24/54     | 5.1                     | 4.3                      | 6.5                       | 0.46                    | 0.39                     | 300        | ----                 |                   |
| 10/5/54   | 12.6                    | 6.1                      | 8.0                       | 0.72                    | 0.51                     | 300        | NT*                  |                   | 10/5/54     | 7.3                     | 7.3                      | 6.1                       | 0.66                    | 0.66                     | 300        | NT                   |                   |
| 10/27/54  | 12.3                    | 2.3                      | 5.2                       | 0.30                    | 0.78                     | 300        | ----                 |                   | 10/27/54    | 9.4                     | 8.3                      | 6.5                       | 0.85                    | 0.75                     | 300        | ----                 |                   |
| 4/20/55   | 12.6                    | 12.1                     | 3.5                       | 1.36                    | 1.02                     | 231        | NT*                  |                   | 4/20/55     | 10.1                    | 8.5                      | 8.2                       | 0.91                    | 0.76                     | 300        | 0.81                 |                   |
| 5/17/55   | 10.3                    | 9.4                      | 8.6                       | 0.75                    | 0.73                     | 300        | NT                   |                   | 5/17/55     | 24.4                    | 39.7                     | 7.4                       | 0.22                    | 0.36                     | 300        | NT                   |                   |
| 6/6/55  | 20.0                    | 14.6                     | 10.7                      | 1.46                    | 1.23                     | 233        | ----                 |                   | 6/6/55      | 15.5                    | 10.9                     | 10.2                      | 1.40                    | 0.92                     | 249        | ----                 |                   |
| Site 132, Hubbard Co., Minn.<br>Menasha LS/LS (SM)        |                         |                          |                           |                         |                          |            |                      |                   |             |                         |                          |                           |                         |                          |            |                      |                   |
| 7/13/54   | 3.2                     | 3.4                      | 4.3                       | 0.29                    | 0.32                     | 285        | ----                 |                   | 7/13/54     | 9.4                     | 6.8                      | 3.2                       | 0.83                    | 0.62                     | 300        | ----                 |                   |
| 8/4/54  | 6.2                     | 4.3                      | 2.4                       | 0.56                    | 0.40                     | 300        | ----                 |                   | 8/4/54      | 8.2                     | 6.4                      | 4.1                       | 0.72                    | 0.58                     | 300        | ----                 |                   |
| 8/24/54   | 7.5                     | 4.7                      | 4.8                       | 0.68                    | 0.44                     | 283        | ----                 |                   | 8/24/54     | 7.7                     | 5.9                      | 7.7                       | 0.68                    | 0.54                     | 300        | ----                 |                   |
| 10/5/54   | 6.5                     | 4.5                      | 3.2                       | 0.58                    | 0.42                     | 300        | NT                   |                   | 10/5/54     | 13.3                    | 12.2                     | 10.0                      | 1.17                    | 1.11                     | 237        | NT                   |                   |
| 10/27/54  | 7.6                     | 5.5                      | 6.3                       | 0.68                    | 0.51                     | 217        | ----                 |                   | 10/27/54    | 18.9                    | 11.3                     | 12.6                      | 1.67                    | 1.08                     | 279        | ----                 |                   |
| 4/20/55   | 9.4                     | 7.9                      | 7.4                       | 0.85                    | 0.72                     | 211        | 1.51*                |                   | 4/20/55     | 18.1                    | 12.9                     | 10.4                      | 1.60                    | 1.18                     | 221        | NT*                  |                   |
| 5/17/55   | 5.7                     | 4.4                      | 5.3                       | 0.51                    | 0.41                     | 228        | NT                   |                   | 5/17/55     | 10.5                    | 12.1                     | 10.2                      | 0.93                    | 1.10                     | 300        | NT                   |                   |
| 6/6/55  | 14.2                    | 8.0                      | 7.6                       | 1.28                    | 0.74                     | 203        | ----                 |                   | 6/10/55     | 19.1                    | 13.9                     | 5.0                       | 1.68                    | 1.27                     | 275        | ----                 |                   |
| Site 131, Hubbard Co., Minn.<br>Todd LS/LS (SM)           |                         |                          |                           |                         |                          |            |                      |                   |             |                         |                          |                           |                         |                          |            |                      |                   |
| 7/13/54   | 9.4                     | 6.8                      | 3.2                       | 0.83                    | 0.62                     | 300        | ----                 |                   | 7/13/54     | 9.4                     | 6.8                      | 3.2                       | 0.83                    | 0.62                     | 300        | ----                 |                   |
| 8/4/54  | 8.2                     | 6.4                      | 4.1                       | 0.72                    | 0.58                     | 300        | ----                 |                   | 8/4/54      | 8.2                     | 6.4                      | 4.1                       | 0.72                    | 0.58                     | 300        | ----                 |                   |
| 8/24/54   | 7.7                     | 5.9                      | 7.7                       | 0.68                    | 0.54                     | 300        | ----                 |                   | 8/24/54     | 7.7                     | 5.9                      | 7.7                       | 0.68                    | 0.54                     | 300        | ----                 |                   |
| 10/5/54   | 13.3                    | 12.2                     | 10.0                      | 1.17                    | 1.11                     | 237        | NT                   |                   | 10/5/54     | 13.3                    | 12.2                     | 10.0                      | 1.17                    | 1.11                     | 237        | NT                   |                   |
| 10/27/54  | 18.9                    | 11.3                     | 12.6                      | 1.67                    | 1.08                     | 279        | ----                 |                   | 10/27/54    | 18.9                    | 11.3                     | 12.6                      | 1.67                    | 1.08                     | 279        | ----                 |                   |
| 4/20/55   | 18.1                    | 12.9                     | 10.4                      | 1.60                    | 1.18                     | 221        | NT*                  |                   | 4/20/55     | 18.1                    | 12.9                     | 10.4                      | 1.60                    | 1.18                     | 221        | NT*                  |                   |
| 5/17/55   | 10.5                    | 12.1                     | 10.2                      | 0.93                    | 1.10                     | 300        | NT                   |                   | 5/17/55     | 10.5                    | 12.1                     | 10.2                      | 0.93                    | 1.10                     | 300        | NT                   |                   |
| 6/10/55   | 19.1                    | 13.9                     | 5.0                       | 1.68                    | 1.27                     | 275        | ----                 |                   | 6/10/55     | 19.1                    | 13.9                     | 5.0                       | 1.68                    | 1.27                     | 275        | ----                 |                   |

(Continued)

Note: NT = no test.  
FW = free water

\* Vibrated remolding test.  
† Measured 0- to 6-in. depth.



Table B3c (Continued)  
Lake States Region (Continued)

| Sample Date  | Soil Moisture Content |                    |                     |                   |                    |                     | Cone Index | Remold-<br>ing Index | Depth to<br>Water Table<br>in. | Sample Date | Soil Moisture Content |                    |                     |                   |                    |                     | Cone Index | Remold-<br>ing Index | Depth to<br>Water Table<br>in. |
|--|-----------------------|--------------------|---------------------|-------------------|--------------------|---------------------|------------|----------------------|--------------------------------|-------------|-----------------------|--------------------|---------------------|-------------------|--------------------|---------------------|------------|----------------------|--------------------------------|
|  | Percent Weight Basis  |                    |                     | in./6 in.         |                    |                     |            |                      |                                |             | Percent Weight Basis  |                    |                     | in./6 in.         |                    |                     |            |                      |                                |
|  | 0- to 6-in. Depth     | 6- to 12-in. Depth | 12- to 18-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth |            |                      |                                |             | 0- to 6-in. Depth     | 6- to 12-in. Depth | 12- to 18-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth |            |                      |                                |
| Site 134, Hubbard Co., Minn.   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Rockwood SL/SL (SM)  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/13/54  | 12.2                  | 7.5                | 5.2                 | 1.02              | 0.66               | 300                 | ----       | ----                 | 7/14/54                        | 45.4        | 27.7                  | 50.5               | 2.94                | 2.18              | 143                | ----                | ----       |                      |                                |
| 8/4/54   | 12.3                  | 3.7                | 4.1                 | 1.02              | 0.32               | 300                 | ----       | ----                 | 8/4/54                         | 38.0        | 33.3                  | 36.3               | 2.46                | 2.66              | 158                | ----                | ----       |                      |                                |
| 8/24/54  | 10.1                  | 11.4               | 4.3                 | 0.84              | 1.00               | 300                 | ----       | ----                 | 8/24/54                        | 37.9        | 34.8                  | 29.3               | 2.46                | 2.74              | 273                | ----                | ----       |                      |                                |
| 10/5/54  | 14.5                  | 12.8               | 6.5                 | 1.21              | 1.12               | 300                 | NT         | ----                 | 10/5/54                        | 32.5        | 22.6                  | 34.5               | 2.11                | 1.78              | 191                | 0.44                | ----       |                      |                                |
| 10/28/54   | 15.3                  | 6.2                | 10.9                | 1.28              | 0.54               | 300                 | ----       | ----                 | 10/28/54                       | 37.9        | 28.6                  | 34.8               | 2.46                | 2.25              | 219                | ----                | ----       |                      |                                |
| 4/20/55  | 22.7                  | 11.1               | 8.8                 | 1.89              | 0.97               | 232                 | 1.14*      | ----                 | 4/21/55                        | 27.4        | 12.1                  | 16.7               | 1.78                | 0.95              | 212                | 1.10                | ----       |                      |                                |
| 5/17/55  | 15.5                  | 10.8               | 9.0                 | 1.29              | 0.95               | 289                 | NT         | ----                 | 5/17/55                        | 30.2        | 12.7                  | 11.6               | 1.96                | 1.00              | 300                | NT                  | ----       |                      |                                |
| 6/6/55   | 21.3                  | 15.7               | 11.2                | 1.78              | 1.38               | 156                 | ----       | ----                 | 6/6/55                         | 32.9        | 11.0                  | 14.2               | 2.13                | 0.86              | 225                | ----                | ----       |                      |                                |
| Site 135, Becker Co., Minn.  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Pierce SL/SL (SM)  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/14/54  | 11.9                  | 4.4                | 5.1                 | 0.80              | 0.40               | 181                 | ----       | ----                 | 7/14/54                        | 19.1        | 14.9                  | 9.8                | 1.27                | 1.09              | 300                | ----                | ----       |                      |                                |
| 8/4/54   | 8.3                   | 4.2                | 4.6                 | 0.56              | 0.38               | 300                 | ----       | ----                 | 8/5/54                         | 11.3        | 9.2                   | 10.2               | 0.75                | 0.67              | 300                | ----                | ----       |                      |                                |
| 8/25/54  | 8.5                   | 3.0                | 3.3                 | 0.57              | 0.27               | 300                 | ----       | ----                 | 8/24/54                        | 10.6        | 8.7                   | 7.8                | 0.71                | 0.64              | 300                | ----                | ----       |                      |                                |
| 10/5/54  | 12.2                  | 6.2                | 4.3                 | 0.82              | 0.56               | 205                 | NT         | ----                 | 10/5/54                        | 10.4        | 10.3                  | 8.9                | 0.69                | 0.75              | 300                | NT                  | ----       |                      |                                |
| 10/28/54   | 19.0                  | 8.6                | 7.1                 | 1.28              | 0.77               | 192                 | ----       | ----                 | 10/28/54                       | 12.2        | 9.1                   | 8.7                | 0.81                | 0.67              | 300                | ----                | ----       |                      |                                |
| 4/21/55  | 23.9                  | 8.2                | 6.4                 | 1.61              | 0.74               | 196                 | NT*        | ----                 | 4/21/55                        | 12.6        | 11.5                  | 7.4                | 0.84                | 0.84              | 300                | ----                | ----       |                      |                                |
| 5/17/55  | 10.9                  | 6.4                | 5.8                 | 0.73              | 0.58               | 251                 | ----       | ----                 | 5/18/55                        | 12.4        | 1.2                   | 9.4                | 0.82                | 0.88              | 300                | NT                  | ----       |                      |                                |
| 6/6/55   | 23.7                  | 7.3                | 3.0                 | 1.59              | 0.66               | 139                 | ----       | ----                 | 6/6/55                         | 17.0        | 2.0                   | 8.9                | 1.13                | 1.46              | 295                | ----                | ----       |                      |                                |
| Site 136, Becker Co., Minn.  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Barnes SL/SL (SC)  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/14/54  | 18.8                  | 14.6               | 12.3                | 1.12              | 1.00               | 284                 | ----       | ----                 | 7/14/54                        | 18.9        | 20.5                  | 23.2               | 1.20                | 1.51              | 300                | ----                | ----       |                      |                                |
| 8/5/54   | 20.5                  | 14.4               | 9.4                 | 1.22              | 0.98               | 278                 | ----       | ----                 | 8/5/54                         | 23.6        | 20.9                  | 22.5               | 1.50                | 1.53              | 300                | ----                | ----       |                      |                                |
| 8/24/54  | 16.3                  | 9.6                | 8.4                 | 0.97              | 0.66               | 300                 | ----       | ----                 | 8/25/54                        | 30.2        | 25.2                  | 21.1               | 1.92                | 1.84              | 276                | ----                | ----       |                      |                                |
| 10/5/54  | 20.7                  | 16.4               | 15.1                | 1.23              | 1.12               | 239                 | NT         | ----                 | 10/6/54                        | 27.8        | 28.9                  | 26.0               | 1.77                | 2.12              | 205                | 1.00                | ----       |                      |                                |
| 10/29/54   | 17.1                  | 13.0               | 12.9                | 1.02              | 0.89               | 275                 | ----       | ----                 | 10/29/54                       | 28.7        | 25.0                  | 22.9               | 1.83                | 1.83              | 253                | ----                | ----       |                      |                                |
| 4/21/55  | 21.1                  | 15.3               | 13.2                | 1.25              | 1.05               | 251                 | NT         | ----                 | 4/21/55                        | 31.5        | 28.4                  | 25.1               | 2.00                | 2.08              | 194                | 0.99                | ----       |                      |                                |
| 5/18/55  | 12.2                  | 9.1                | 9.1                 | 0.72              | 0.62               | 300                 | ----       | ----                 | 5/18/55                        | 20.0        | 22.0                  | 22.5               | 1.27                | 1.61              | 268                | NT                  | ----       |                      |                                |
| 6/6/55   | 28.0                  | 16.4               | 14.0                | 1.66              | 1.09               | 260                 | ----       | ----                 | 6/7/55                         | 25.6        | 23.3                  | 23.9               | 1.63                | 1.70              | 256                | ----                | ----       |                      |                                |
| Site 138, Otter Tail Co., Minn.  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Barnes SL/SL (SC)  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/14/54  | 18.8                  | 14.6               | 12.3                | 1.12              | 1.00               | 284                 | ----       | ----                 | 7/14/54                        | 18.9        | 20.5                  | 23.2               | 1.20                | 1.51              | 300                | ----                | ----       |                      |                                |
| 8/5/54   | 20.5                  | 14.4               | 9.4                 | 1.22              | 0.98               | 278                 | ----       | ----                 | 8/5/54                         | 23.6        | 20.9                  | 22.5               | 1.50                | 1.53              | 300                | ----                | ----       |                      |                                |
| 8/24/54  | 16.3                  | 9.6                | 8.4                 | 0.97              | 0.66               | 300                 | ----       | ----                 | 8/25/54                        | 30.2        | 25.2                  | 21.1               | 1.92                | 1.84              | 276                | ----                | ----       |                      |                                |
| 10/5/54  | 20.7                  | 16.4               | 15.1                | 1.23              | 1.12               | 239                 | NT         | ----                 | 10/6/54                        | 27.8        | 28.9                  | 26.0               | 1.77                | 2.12              | 205                | 1.00                | ----       |                      |                                |
| 10/29/54   | 17.1                  | 13.0               | 12.9                | 1.02              | 0.89               | 275                 | ----       | ----                 | 10/29/54                       | 28.7        | 25.0                  | 22.9               | 1.83                | 1.83              | 253                | ----                | ----       |                      |                                |
| 4/21/55  | 21.1                  | 15.3               | 13.2                | 1.25              | 1.05               | 251                 | NT         | ----                 | 4/21/55                        | 31.5        | 28.4                  | 25.1               | 2.00                | 2.08              | 194                | 0.99                | ----       |                      |                                |
| 5/18/55  | 12.2                  | 9.1                | 9.1                 | 0.72              | 0.62               | 300                 | ----       | ----                 | 5/18/55                        | 20.0        | 22.0                  | 22.5               | 1.27                | 1.61              | 268                | NT                  | ----       |                      |                                |
| 6/6/55   | 28.0                  | 16.4               | 14.0                | 1.66              | 1.09               | 260                 | ----       | ----                 | 6/7/55                         | 25.6        | 23.3                  | 23.9               | 1.63                | 1.70              | 256                | ----                | ----       |                      |                                |
| Site 140, Wilkin Co., Minn.  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Grinstead L/SL (CL)  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/14/54  | 20.9                  | 19.6               | 18.5                | 1.44              | 1.59               | 233                 | ----       | ----                 | 7/14/54                        | 26.7        | 27.5                  | 29.5               | 1.88                | 2.38              | 75                 | ----                | ----       |                      |                                |
| 8/5/54   | 20.1                  | 18.4               | 14.6                | 1.39              | 1.49               | 300                 | ----       | ----                 | 8/5/54                         | 26.0        | 24.0                  | 21.9               | 1.83                | 2.07              | 105                | ----                | ----       |                      |                                |
| 8/25/54  | 20.2                  | 18.4               | 16.7                | 1.39              | 1.49               | 255                 | ----       | ----                 | 8/25/54                        | 26.9        | 20.2                  | 20.1               | 1.89                | 1.75              | 125                | ----                | ----       |                      |                                |
| 10/6/54  | 21.0                  | 17.1               | 18.9                | 1.45              | 1.39               | 300                 | NT         | ----                 | 10/6/54                        | 23.0        | 22.8                  | 22.5               | 1.62                | 1.97              | 156                | 0.99                | ----       |                      |                                |
| 10/29/54   | 19.0                  | 16.1               | 21.6                | 1.31              | 1.30               | 211                 | ----       | ----                 | 10/29/54                       | 25.1        | 23.6                  | 29.0               | 1.77                | 2.04              | 162                | ----                | ----       |                      |                                |
| 4/21/55  | 20.7                  | 18.1               | 16.2                | 1.43              | 1.47               | 215                 | 0.77       | ----                 | 4/21/55                        | 29.3        | 29.4                  | 32.5               | 2.07                | 2.54              | 100                | 0.96                | ----       |                      |                                |
| 5/18/55  | 18.4                  | 17.4               | 14.5                | 1.27              | 1.41               | 300                 | NT         | ----                 | 5/18/55                        | 26.8        | 26.9                  | 29.5               | 1.89                | 2.32              | 138                | 0.92                | ----       |                      |                                |
| 6/7/55   | 21.0                  | 15.9               | 11.7                | 1.45              | 1.29               | 300                 | ----       | ----                 | 6/7/55                         | 28.1        | 26.2                  | 30.6               | 1.99                | 2.26              | 127                | ----                | ----       |                      |                                |
| Plowed before 4/21/55  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Site 143, Grant Co., Minn.   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Bearden L/L (CL)   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/14/54  | 40.2                  | 33.8               | 33.8                | 2.81              | 2.40               | 79                  | ----       | ----                 | 7/14/54                        | 20.2        | 20.3                  | 18.6               | 1.16                | 1.53              | 190                | ----                | ----       |                      |                                |
| 8/5/54   | 32.9                  | 29.5               | 26.2                | 2.30              | 2.09               | 99                  | ----       | ----                 | 8/5/54                         | 20.5        | 15.9                  | 14.4               | 1.18                | 1.20              | 300                | ----                | ----       |                      |                                |
| 9/25/54  | 29.7                  | 27.3               | 25.2                | 2.03              | 1.98               | 111                 | ----       | ----                 | 8/25/54                        | 27.6        | 24.8                  | 21.6               | 1.59                | 1.87              | 156                | ----                | ----       |                      |                                |
| 4/21/55  | 39.3                  | 31.0               | 24.8                | 2.75              | 2.20               | 88                  | 1.04       | ----                 | 10/6/54                        | 32.1        | 30.2                  | 25.5               | 1.85                | 2.28              | 164                | 0.93                | ----       |                      |                                |
| 5/18/55  | 32.3                  | 31.2               | 24.5                | 2.26              | 2.22               | 160                 | 0.85       | ----                 | 10/29/54                       | 35.4        | 28.0                  | 23.4               | 2.04                | 2.12              | 184                | ----                | ----       |                      |                                |
| 6/7/55   | 33.3                  | 28.8               | 17.4                | 2.33              | 1.23               | 161                 | ----       | ----                 | 4/21/55                        | 26.7        | 28.0                  | 21.3               | 1.54                | 2.12              | 91                 | 1.00                | ----       |                      |                                |
| Plowed before 4/21/55  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Site 144, Grant Co., Minn.   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Unclassified SL/L (CL)   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/14/54  | 20.2                  | 20.3               | 18.6                | 1.16              | 1.53               | 190                 | ----       | ----                 | 7/14/54                        | 20.2        | 20.3                  | 18.6               | 1.16                | 1.53              | 190                | ----                | ----       |                      |                                |
| 8/5/54   | 20.5                  | 15.9               | 14.4                | 1.18              | 1.20               | 300                 | ----       | ----                 | 8/5/54                         | 20.5        | 15.9                  | 14.4               | 1.18                | 1.20              | 300                | ----                | ----       |                      |                                |
| 9/25/54  | 27.6                  | 24.8               | 21.6                | 1.59              | 1.87               | 156                 | ----       | ----                 | 8/25/54                        | 27.6        | 24.8                  | 21.6               | 1.59                | 1.87              | 156                | ----                | ----       |                      |                                |
| 10/6/54  | 32.1                  | 30.2               | 25.5                | 1.85              | 2.28               | 164                 | 0.93       | ----                 | 10/6/54                        | 32.1        | 30.2                  | 25.5               | 1.85                | 2.28              | 164                | 0.93                | ----       |                      |                                |
| 10/29/54   | 35.4                  | 28.0               | 23.4                | 2.04              | 2.12               | 184                 | ----       | ----                 | 10/29/54                       | 35.4        | 28.0                  | 23.4               | 2.04                | 2.12              | 184                | ----                | ----       |                      |                                |
| 4/21/55  | 26.7                  | 28.0               | 21.3                | 1.54              | 2.12               | 91                  | 1.00       | ----                 | 4/21/55                        | 26.7        | 28.0                  | 21.3               | 1.54                | 2.12              | 91                 | 1.00                | ----       |                      |                                |
| 5/18/55  | 30.3                  | 24.6               | 21.5                | 1.74              | 1.86               | 172                 | 0.98       | ----                 | 5/18/55                        | 30.3        | 24.6                  | 21.5               | 1.74                | 1.86              | 172                | 0.98                | ----       |                      |                                |
| 6/7/55   | 30.2                  | 26.8               | 26.0                | 1.74              | 2.03               | 218                 | ----       | ----                 | 6/7/55                         | 30.2        | 26.8                  | 26.0               | 1.74                | 2.03              | 218                | ----                | ----       |                      |                                |
| Site moved to edge of field 10/29/54, plowed and disked before 4/21/55 |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Site 146, Stevens Co., Minn.   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Fargo SL/SL (M)  |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/15/54  | 13.8                  | 23.8               | 23.6                | 0.81              | 1.60               | 166                 | ----       | ----                 | 7/15/54                        | 22.5        | 22.9                  | 21.4               | 1.66                | 1.70              | 166                | ----                | ----       |                      |                                |
| 8/5/54   | 29.1                  | 21.7               | 18.9                | 1.71              | 1.46               | 205                 | ----       | ----                 | 8/5/54                         | 17.1        | 15.3                  | 16.9               | 1.26                | 1.18              | 238                | ----                | ----       |                      |                                |
| 9/25/54  | 28.0                  | 22.8               | 18.2                | 1.65              | 1.53               | 205                 | ----       | ----                 | 9/25/54                        | 22.4        | 18.4                  | 19.1               | 1.65                | 1.37              | 224                | ----                | ----       |                      |                                |
| 10/6/54  | 34.3                  | 25.3               | 22.1                | 2.02              | 1.73               | 216                 | NT         | ----                 | 10/6/54                        | 19.5        | 20.1                  | 18.0               | 1.44                | 1.50              | 182                | NT                  | ----       |                      |                                |
| 10/29/54   | 41.8                  | 22.9               | 18.5                | 2.46              | 1.54               | 244                 | ----       | ----                 | 10/29/54                       | 26.2        | 22.0                  | 18.6               | 1.93                | 1.64              | 177                | ----                | ----       |                      |                                |
| 4/21/55  | 36.0                  | 29.7               | 25.4                | 2.12              | 2.00               | 183                 | 1.30       | ----                 | 4/21/55                        | 22.6        | 21.8                  | 21.2               | 1.67                | 1.62              | 198                | 1.10                | ----       |                      |                                |
| 5/18/55  | 21.4                  | 19.5               | 18.7                | 1.26              | 1.31               | 294                 | NT         | ----                 | 5/18/55                        | 14.6        | 19.0                  | 20.0               | 1.08                | 1.41              | 256                | NT                  | ----       |                      |                                |
| 6/7/55   | 33.3                  | 20.6               | 16.4                | 1.96              | 1.38               | 261                 | ----       | ----                 | 6/7/55                         | 23.0        | 12.2                  | 18.1               | 1.70                | 0.91              | 223                | ----                | ----       |                      |                                |
| Site 147, Stevens Co., Minn.   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Sioux SL/SL (CL)   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/15/54  | 13.8                  | 23.8               | 23.6                | 0.81              | 1.60               | 166                 | ----       | ----                 | 7/15/54                        | 22.5        | 22.9                  | 21.4               | 1.66                | 1.70              | 166                | ----                | ----       |                      |                                |
| 8/5/54   | 29.1                  | 21.7               | 18.9                | 1.71              | 1.46               | 205                 | ----       | ----                 | 8/5/54                         | 17.1        | 15.3                  | 16.9               | 1.26                | 1.18              | 238                | ----                | ----       |                      |                                |
| 9/25/54  | 28.0                  | 22.8               | 18.2                | 1.65              | 1.53               | 205                 | ----       | ----                 | 9/25/54                        | 22.4        | 18.4                  | 19.1               | 1.65                | 1.37              | 224                | ----                | ----       |                      |                                |
| 10/6/54  | 34.3                  | 25.3               | 22.1                | 2.02              | 1.73               | 216                 | NT         | ----                 | 10/6/54                        | 19.5        | 20.1                  | 18.0               | 1.44                | 1.50              | 182                | NT                  | ----       |                      |                                |
| 10/29/54   | 41.8                  | 22.9               | 18.5                | 2.46              | 1.54               | 244                 | ----       | ----                 | 10/29/54                       | 26.2        | 22.0                  | 18.6               | 1.93                | 1.64              | 177                | ----                | ----       |                      |                                |
| 4/21/55  | 36.0                  | 29.7               | 25.4                | 2.12              | 2.00               | 183                 | 1.30       | ----                 | 4/21/55                        | 22.6        | 21.8                  | 21.2               | 1.67                | 1.62              | 198                | 1.10                | ----       |                      |                                |
| 5/18/55  | 21.4                  | 19.5               | 18.7                | 1.26              | 1.31               | 294                 | NT         | ----                 | 5/18/55                        | 14.6        | 19.0                  | 20.0               | 1.08                | 1.41              | 256                | NT                  | ----       |                      |                                |
| 6/7/55   | 33.3                  | 20.6               | 16.4                | 1.96              | 1.38               | 261                 | ----       | ----                 | 6/7/55                         | 23.0        | 12.2                  | 18.1               | 1.70                | 0.91              | 223                | ----                | ----       |                      |                                |
| Site 148, Stevens Co., Minn.   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| Clarion SL/SL (CL)   |                       |                    |                     |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |
| 7/15/54  | 31.4                  | 32.8               | 27.8                | 2.30              | 2.46               | 115                 | ----       | ----                 | 7/15/54                        | 42.4        | 22.3                  | 13.2               | 2.04                | 1.78              | 156                | ----                | ----       |                      |                                |
| 8/5/54   | 20.5                  | 18.1               | 16.5                | 1.50              | 1.36               | 210                 | ----       | ----                 | 8/5/54                         | 34.7        | 24.2                  | 13.4               | 1.66                | 1.96              | 199                | ----                | ----       |                      |                                |
| 9/25/54  | 27.1                  | 20.3               | 16.7                | 1.98              | 1.52               | 207                 | ----       | ----                 | 8/25/54                        | 37.8        | 17.5                  | 10.8               | 1.81                | 1.40              | 230                | ----                | ----       |                      |                                |
| 10/6/54  | 30.0                  | 28.2               | 28.0                | 2.20              | 2.12               | 156                 | 0.84       | ----                 | 10/6/54                        | 37.0        | 24.3                  | 11.8               | 1.78                | 1.94              | 193                | 1.20                | ----       |                      |                                |
| 10/29/54   | 29.7                  | 27.3               | 2                   |                   |                    |                     |            |                      |                                |             |                       |                    |                     |                   |                    |                     |            |                      |                                |



Table B3c (Continued)  
Lake States Region (Continued)

| Soil Moisture Content           |            |       |             |       |              |       |              |          |              | Cone Index | Depth to water | Soil Moisture Content |       |             |       |              |          |              |       |              |       | Cone Index  | Depth to water |          |             |       |              |       |              |       |              |       |
|---------------------------------|------------|-------|-------------|-------|--------------|-------|--------------|----------|--------------|------------|----------------|-----------------------|-------|-------------|-------|--------------|----------|--------------|-------|--------------|-------|-------------|----------------|----------|-------------|-------|--------------|-------|--------------|-------|--------------|-------|
| Percent Weight Basis            |            |       |             |       |              |       |              |          |              |            |                | Percent Weight Basis  |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| Sample Date                     | 0 to 6-in. |       | 6 to 12-in. |       | 12 to 18-in. |       | 18 to 24-in. |          | 24 to 30-in. |            | Sample Date    | 0 to 6-in.            |       | 6 to 12-in. |       | 12 to 18-in. |          | 18 to 24-in. |       | 24 to 30-in. |       | Sample Date | 0 to 6-in.     |          | 6 to 12-in. |       | 12 to 18-in. |       | 18 to 24-in. |       | 24 to 30-in. |       |
|                                 | Depth      | Depth | Depth       | Depth | Depth        | Depth | Depth        | Depth    | Depth        | Depth      |                | Depth                 | Depth | Depth       | Depth | Depth        | Depth    | Depth        | Depth | Depth        | Depth |             | Depth          | Depth    | Depth       | Depth | Depth        | Depth | Depth        | Depth | Depth        | Depth |
| Site 150, Swift Co., Minn.      |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| Unclassified LS/S (SM)          |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| 7/15/54                         | 7.0        | 7.6   | 5.2         | 0.56  | 0.56         | 0.57  | 275          | ----     | 7/15/54      | 27.1       | 24.3           | 21.2                  | 1.56  | 1.62        | 206   | ----         | 7/15/54  | 27.1         | 24.3  | 21.2         | 1.56  | 1.62        | 206            | ----     | 7/15/54     | 27.1  | 24.3         | 21.2  | 1.56         | 1.62  | 206          | ----  |
| 8/5/54                          | 5.0        | 5.0   | 5.2         | 0.56  | 0.56         | 0.57  | 300          | ----     | 8/5/54       | 19.3       | 12.6           | 11.4                  | 1.11  | 0.94        | 300   | ----         | 8/5/54   | 19.3         | 12.6  | 11.4         | 1.11  | 0.94        | 300            | ----     | 8/5/54      | 19.3  | 12.6         | 11.4  | 1.11         | 0.94  | 300          | ----  |
| 8/25/54                         | 7.3        | 5.6   | 3.7         | 0.57  | 0.46         | 0.57  | 300          | ----     | 8/25/54      | 31.0       | 17.4           | 11.3                  | 1.75  | 1.16        | 273   | ----         | 8/25/54  | 31.0         | 17.4  | 11.3         | 1.75  | 1.16        | 273            | ----     | 8/25/54     | 31.0  | 17.4         | 11.3  | 1.75         | 1.16  | 273          | ----  |
| 10/10/54                        | 7.1        | 1.5   | 6.0         | 0.55  | 1.00         | 2.93  | NT           | ----     | 10/10/54     | 21.0       | 27.1           | 15.0                  | 1.24  | 1.30        | 258   | NT           | 10/10/54 | 21.0         | 27.1  | 15.0         | 1.24  | 1.30        | 258            | NT       | 10/10/54    | 21.0  | 27.1         | 15.0  | 1.24         | 1.30  | 258          | NT    |
| 10/30/54                        | 12.1       | 3.2   | 7.1         | 0.35  | 0.73         | 2.58  | NT           | ----     | 10/30/54     | 23.7       | 22.3           | 20.4                  | 1.71  | 1.43        | 254   | ----         | 10/30/54 | 23.7         | 22.3  | 20.4         | 1.71  | 1.43        | 254            | ----     | 10/30/54    | 23.7  | 22.3         | 20.4  | 1.71         | 1.43  | 254          | ----  |
| 4/22/55                         | 12.8       | 11.1  | 3.2         | 0.74  | 0.76         | 2.53  | NT           | ----     | 4/22/55      | 48.5       | 34.5           | 28.3                  | 2.31  | 2.30        | 193   | 0.75         | 4/22/55  | 48.5         | 34.5  | 28.3         | 2.31  | 2.30        | 193            | 0.75     | 4/22/55     | 48.5  | 34.5         | 28.3  | 2.31         | 2.30  | 193          | 0.75  |
| 5/15/55                         | 5.6        | 6.4   | 5.3         | 0.41  | 0.55         | 3.00  | NT           | ----     | 5/15/55      | 15.7       | 15.9           | 16.3                  | 0.96  | 1.06        | 259   | NT           | 5/15/55  | 15.7         | 15.9  | 16.3         | 0.96  | 1.06        | 259            | NT       | 5/15/55     | 15.7  | 15.9         | 16.3  | 0.96         | 1.06  | 259          | NT    |
| 6/7/55                          | 3.3        | 5.7   | 3.5         | 0.72  | 0.43         | 3.00  | ----         | ----     | 6/7/55       | 30.3       | 20.3           | 13.6                  | 1.74  | 1.39        | 245   | ----         | 6/7/55   | 30.3         | 20.3  | 13.6         | 1.74  | 1.39        | 245            | ----     | 6/7/55      | 30.3  | 20.3         | 13.6  | 1.74         | 1.39  | 245          | ----  |
| Site 152, Kandiyohi Co., Minn.  |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| Unclassified SL/SL (SM)         |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| 7/15/54                         | 5.7        | 3.5   | 12.3        | 0.60  | 0.57         | 3.00  | ----         | 7/15/54  | 27.5         | 15.4       | 12.1           | 1.50                  | 1.32  | 213         | ----  | 7/15/54      | 27.5     | 15.4         | 12.1  | 1.50         | 1.32  | 213         | ----           | 7/15/54  | 27.5        | 15.4  | 12.1         | 1.50  | 1.32         | 213   | ----         |       |
| 8/5/54                          | 11.2       | 9.3   | 5.6         | 0.77  | 0.63         | 3.00  | ----         | 8/5/54   | 4.2          | 4.3        | 3.2            | 0.27                  | 0.37  | 300         | ----  | 8/5/54       | 4.2      | 4.3          | 3.2   | 0.27         | 0.37  | 300         | ----           | 8/5/54   | 4.2         | 4.3   | 3.2          | 0.27  | 0.37         | 300   | ----         |       |
| 8/25/54                         | 13.2       | 12.2  | 7.57        | 1.24  | 0.96         | 3.00  | ----         | 8/25/54  | 10.4         | 10.3       | 11.5           | 0.68                  | 0.88  | 300         | ----  | 8/25/54      | 10.4     | 10.3         | 11.5  | 0.68         | 0.88  | 300         | ----           | 8/25/54  | 10.4        | 10.3  | 11.5         | 0.68  | 0.88         | 300   | ----         |       |
| 10/7/54                         | 15.0       | 21.0  | 12.7        | 1.03  | 1.43         | 3.00  | NT           | ----     | 10/7/54      | 13.8       | 7.2            | 12.1                  | 0.90  | 0.62        | 269   | NT           | 10/7/54  | 13.8         | 7.2   | 12.1         | 0.90  | 0.62        | 269            | NT       | 10/7/54     | 13.8  | 7.2          | 12.1  | 0.90         | 0.62  | 269          | NT    |
| 10/30/54                        | 15.3       | 15.6  | 15.0        | 1.56  | 1.32         | 2.40  | ----         | 10/30/54 | 26.2         | 16.8       | 12.2           | 1.71                  | 1.44  | 222         | ----  | 10/30/54     | 26.2     | 16.8         | 12.2  | 1.71         | 1.44  | 222         | ----           | 10/30/54 | 26.2        | 16.8  | 12.2         | 1.71  | 1.44         | 222   | ----         |       |
| 4/22/55                         | 23.0       | 24.5  | 22.6        | 1.57  | 1.73         | 2.04  | NT           | ----     | 4/22/55      | 30.4       | 19.2           | 14.4                  | 1.39  | 1.65        | 134   | 0.36         | 4/22/55  | 30.4         | 19.2  | 14.4         | 1.39  | 1.65        | 134            | 0.36     | 4/22/55     | 30.4  | 19.2         | 14.4  | 1.39         | 1.65  | 134          | 0.36  |
| 5/18/55                         | 3.4        | 12.4  | 12.5        | 0.64  | 0.88         | 3.00  | NT           | ----     | 5/13/55      | 11.1       | 9.7            | 9.7                   | 0.72  | 0.75        | 300   | NT           | 5/13/55  | 11.1         | 9.7   | 9.7          | 0.72  | 0.75        | 300            | NT       | 5/13/55     | 11.1  | 9.7          | 9.7   | 0.72         | 0.75  | 300          | NT    |
| 6/7/55                          | 10.0       | 6.1   | 3.5         | 0.68  | 0.49         | 3.00  | ----         | ----     | 6/7/55       | 21.5       | 12.0           | 6.4                   | 1.41  | 1.20        | 283   | ----         | 6/7/55   | 21.5         | 12.0  | 6.4          | 1.41  | 1.20        | 283            | ----     | 6/7/55      | 21.5  | 12.0         | 6.4   | 1.41         | 1.20  | 283          | ----  |
| Site 153, Stearns Co., Minn.    |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| Unclassified SL/SL (SC)         |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| 7/15/54                         | 5.7        | 3.5   | 12.3        | 0.60  | 0.57         | 3.00  | ----         | 7/15/54  | 27.5         | 15.4       | 12.1           | 1.50                  | 1.32  | 213         | ----  | 7/15/54      | 27.5     | 15.4         | 12.1  | 1.50         | 1.32  | 213         | ----           | 7/15/54  | 27.5        | 15.4  | 12.1         | 1.50  | 1.32         | 213   | ----         |       |
| 8/5/54                          | 11.2       | 9.3   | 5.6         | 0.77  | 0.63         | 3.00  | ----         | 8/5/54   | 4.2          | 4.3        | 3.2            | 0.27                  | 0.37  | 300         | ----  | 8/5/54       | 4.2      | 4.3          | 3.2   | 0.27         | 0.37  | 300         | ----           | 8/5/54   | 4.2         | 4.3   | 3.2          | 0.27  | 0.37         | 300   | ----         |       |
| 8/25/54                         | 13.2       | 12.2  | 7.57        | 1.24  | 0.96         | 3.00  | ----         | 8/25/54  | 10.4         | 10.3       | 11.5           | 0.68                  | 0.88  | 300         | ----  | 8/25/54      | 10.4     | 10.3         | 11.5  | 0.68         | 0.88  | 300         | ----           | 8/25/54  | 10.4        | 10.3  | 11.5         | 0.68  | 0.88         | 300   | ----         |       |
| 10/7/54                         | 15.0       | 21.0  | 12.7        | 1.03  | 1.43         | 3.00  | NT           | ----     | 10/7/54      | 13.8       | 7.2            | 12.1                  | 0.90  | 0.62        | 269   | NT           | 10/7/54  | 13.8         | 7.2   | 12.1         | 0.90  | 0.62        | 269            | NT       | 10/7/54     | 13.8  | 7.2          | 12.1  | 0.90         | 0.62  | 269          | NT    |
| 10/30/54                        | 15.3       | 15.6  | 15.0        | 1.56  | 1.32         | 2.40  | ----         | 10/30/54 | 26.2         | 16.8       | 12.2           | 1.71                  | 1.44  | 222         | ----  | 10/30/54     | 26.2     | 16.8         | 12.2  | 1.71         | 1.44  | 222         | ----           | 10/30/54 | 26.2        | 16.8  | 12.2         | 1.71  | 1.44         | 222   | ----         |       |
| 4/22/55                         | 23.0       | 24.5  | 22.6        | 1.57  | 1.73         | 2.04  | NT           | ----     | 4/22/55      | 30.4       | 19.2           | 14.4                  | 1.39  | 1.65        | 134   | 0.36         | 4/22/55  | 30.4         | 19.2  | 14.4         | 1.39  | 1.65        | 134            | 0.36     | 4/22/55     | 30.4  | 19.2         | 14.4  | 1.39         | 1.65  | 134          | 0.36  |
| 5/18/55                         | 3.4        | 12.4  | 12.5        | 0.64  | 0.88         | 3.00  | NT           | ----     | 5/13/55      | 11.1       | 9.7            | 9.7                   | 0.72  | 0.75        | 300   | NT           | 5/13/55  | 11.1         | 9.7   | 9.7          | 0.72  | 0.75        | 300            | NT       | 5/13/55     | 11.1  | 9.7          | 9.7   | 0.72         | 0.75  | 300          | NT    |
| 6/7/55                          | 10.0       | 6.1   | 3.5         | 0.68  | 0.49         | 3.00  | ----         | ----     | 6/7/55       | 21.5       | 12.0           | 6.4                   | 1.41  | 1.20        | 283   | ----         | 6/7/55   | 21.5         | 12.0  | 6.4          | 1.41  | 1.20        | 283            | ----     | 6/7/55      | 21.5  | 12.0         | 6.4   | 1.41         | 1.20  | 283          | ----  |
| Site 154, Benton Co., Minn.     |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| Unclassified LS/SL (SM-SC)      |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| 7/15/54                         | 13.8       | 13.7  | 10.5        | 1.20  | 1.26         | 1.84  | ----         | 7/15/54  | 28.9         | 19.3       | 19.4           | 2.25                  | 1.76  | 222         | ----  | 7/15/54      | 28.9     | 19.3         | 19.4  | 2.25         | 1.76  | 222         | ----           | 7/15/54  | 28.9        | 19.3  | 19.4         | 2.25  | 1.76         | 222   | ----         |       |
| 8/5/54                          | 8.8        | 9.4   | 6.2         | 0.77  | 0.77         | 3.00  | ----         | 8/5/54   | 27.9         | 17.4       | 15.6           | 2.13                  | 1.54  | 269         | ----  | 8/5/54       | 27.9     | 17.4         | 15.6  | 2.13         | 1.54  | 269         | ----           | 8/5/54   | 27.9        | 17.4  | 15.6         | 2.13  | 1.54         | 269   | ----         |       |
| 8/25/54                         | 14.0       | 12.3  | 3.2         | 1.22  | 1.12         | 2.59  | ----         | 8/25/54  | 31.3         | 25.3       | 19.8           | 2.44                  | 2.29  | 251         | ----  | 8/25/54      | 31.3     | 25.3         | 19.8  | 2.44         | 2.29  | 251         | ----           | 8/25/54  | 31.3        | 25.3  | 19.8         | 2.44  | 2.29         | 251   | ----         |       |
| 10/7/54                         | 16.6       | 15.4  | 11.3        | 1.44  | 1.41         | 2.26  | NT           | ----     | 10/7/54      | 30.4       | 19.8           | 18.7                  | 2.37  | 1.76        | 231   | 0.90         | 10/7/54  | 30.4         | 19.8  | 18.7         | 2.37  | 1.76        | 231            | 0.90     | 10/7/54     | 30.4  | 19.8         | 18.7  | 2.37         | 1.76  | 231          | 0.90  |
| 10/30/54                        | 12.3       | 15.2  | 12.0        | 1.59  | 1.40         | 1.00  | ----         | 10/30/54 | 32.5         | 25.4       | 20.9           | 2.54                  | 2.26  | 142         | ----  | 10/30/54     | 32.5     | 25.4         | 20.9  | 2.54         | 2.26  | 142         | ----           | 10/30/54 | 32.5        | 25.4  | 20.9         | 2.54  | 2.26         | 142   | ----         |       |
| 4/22/55                         | 16.1       | 14.8  | 11.5        | 1.40  | 1.35         | 2.02  | 1.30         | ----     | 4/22/55      | FW         | FW             | FW                    | FW    | FW          | 251   | ----         | 4/22/55  | FW           | FW    | FW           | FW    | FW          | 251            | ----     | 4/22/55     | FW    | FW           | FW    | FW           | FW    | 251          | ----  |
| 5/19/55                         | 3.0        | 10.5  | 7.5         | 0.78  | 0.96         | 3.00  | NT           | ----     | 5/19/55      | 25.3       | 23.4           | 18.0                  | 1.77  | 2.08        | 300   | NT           | 5/19/55  | 25.3         | 23.4  | 18.0         | 1.77  | 2.08        | 300            | NT       | 5/19/55     | 25.3  | 23.4         | 18.0  | 1.77         | 2.08  | 300          | NT    |
| 6/7/55                          | 11.8       | 10.6  | 6.5         | 1.03  | 0.97         | 2.73  | ----         | ----     | 5/6/55       | 30.6       | 21.3           | 15.0                  | 2.39  | 1.89        | 270   | ----         | 5/6/55   | 30.6         | 21.3  | 15.0         | 2.39  | 1.89        | 270            | ----     | 5/6/55      | 30.6  | 21.3         | 15.0  | 2.39         | 1.89  | 270          | ----  |
| Site 155, Mille Lacs Co., Minn. |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| Onamia SIL/L (ML)               |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| 7/15/54                         | 13.8       | 13.7  | 10.5        | 1.20  | 1.26         | 1.84  | ----         | 7/15/54  | 28.9         | 19.3       | 19.4           | 2.25                  | 1.76  | 222         | ----  | 7/15/54      | 28.9     | 19.3         | 19.4  | 2.25         | 1.76  | 222         | ----           | 7/15/54  | 28.9        | 19.3  | 19.4         | 2.25  | 1.76         | 222   | ----         |       |
| 8/5/54                          | 8.8        | 9.4   | 6.2         | 0.77  | 0.77         | 3.00  | ----         | 8/5/54   | 27.9         | 17.4       | 15.6           | 2.13                  | 1.54  | 269         | ----  | 8/5/54       | 27.9     | 17.4         | 15.6  | 2.13         | 1.54  | 269         | ----           | 8/5/54   | 27.9        | 17.4  | 15.6         | 2.13  | 1.54         | 269   | ----         |       |
| 8/25/54                         | 14.0       | 12.3  | 3.2         | 1.22  | 1.12         | 2.59  | ----         | 8/25/54  | 31.3         | 25.3       | 19.8           | 2.44                  | 2.29  | 251         | ----  | 8/25/54      | 31.3     | 25.3         | 19.8  | 2.44         | 2.29  | 251         | ----           | 8/25/54  | 31.3        | 25.3  | 19.8         | 2.44  | 2.29         | 251   | ----         |       |
| 10/7/54                         | 16.6       | 15.4  | 11.3        | 1.44  | 1.41         | 2.26  | NT           | ----     | 10/7/54      | 30.4       | 19.8           | 18.7                  | 2.37  | 1.76        | 231   | 0.90         | 10/7/54  | 30.4         | 19.8  | 18.7         | 2.37  | 1.76        | 231            | 0.90     | 10/7/54     | 30.4  | 19.8         | 18.7  | 2.37         | 1.76  | 231          | 0.90  |
| 10/30/54                        | 12.3       | 15.2  | 12.0        | 1.59  | 1.40         | 1.00  | ----         | 10/30/54 | 32.5         | 25.4       | 20.9           | 2.54                  | 2.26  | 142         | ----  | 10/30/54     | 32.5     | 25.4         | 20.9  | 2.54         | 2.26  | 142         | ----           | 10/30/54 | 32.5        | 25.4  | 20.9         | 2.54  | 2.26         | 142   | ----         |       |
| 4/22/55                         | 16.1       | 14.8  | 11.5        | 1.40  | 1.35         | 2.02  | 1.30         | ----     | 4/22/55      | FW         | FW             | FW                    | FW    | FW          | 251   | ----         | 4/22/55  | FW           | FW    | FW           | FW    | FW          | 251            | ----     | 4/22/55     | FW    | FW           | FW    | FW           | FW    | 251          | ----  |
| 5/19/55                         | 3.0        | 10.5  | 7.5         | 0.78  | 0.96         | 3.00  | NT           | ----     | 5/19/55      | 25.3       | 23.4           | 18.0                  | 1.77  | 2.08        | 300   | NT           | 5/19/55  | 25.3         | 23.4  | 18.0         | 1.77  | 2.08        | 300            | NT       | 5/19/55     | 25.3  | 23.4         | 18.0  | 1.77         | 2.08  | 300          | NT    |
| 6/7/55                          | 11.8       | 10.6  | 6.5         | 1.03  | 0.97         | 2.73  | ----         | ----     | 5/6/55       | 30.6       | 21.3           | 15.0                  | 2.39  | 1.89        | 270   | ----         | 5/6/55   | 30.6         | 21.3  | 15.0         | 2.39  | 1.89        | 270            | ----     | 5/6/55      | 30.6  | 21.3         | 15.0  | 2.39         | 1.89  | 270          | ----  |
| Site 156, Mille Lacs Co., Minn. |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| Mille Lacs SIL/SIL (ML)         |            |       |             |       |              |       |              |          |              |            |                |                       |       |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |
| 7/15/54                         | 25.0       | 20.0  | 18.8        | 2.08  | 1.31         | 174   | ----         | 7/15/54  | 32.9         | 22.9       | 18.5           | 2.23                  | 1.9   |             |       |              |          |              |       |              |       |             |                |          |             |       |              |       |              |       |              |       |



Table B3c (Concluded)  
Lake States Region (Continued)

| Soil Moisture Content                                   |                       |                        |                      |                       |                        |                      | Cone<br>Index | Femold-<br>1-g<br>Index | Depth to<br>Water<br>Table<br>in. | Soil Moisture Content |                        |                      |                       |                        |                      |                       | Cone<br>Index | Femold-<br>1-g<br>Index | Depth to<br>Water<br>Table<br>in. |
|---|-----------------------|------------------------|----------------------|-----------------------|------------------------|----------------------|---------------|-------------------------|-----------------------------------|-----------------------|------------------------|----------------------|-----------------------|------------------------|----------------------|-----------------------|---------------|-------------------------|-----------------------------------|
| Percent Weight Basis                                    |                       |                        | in. 5 in.            |                       |                        |                      |               |                         |                                   | Percent Weight Basis  |                        |                      | in. 5 in.             |                        |                      |                       |               |                         |                                   |
| 0- to<br>6-in. Depth                                    | 6- to<br>12-in. Depth | 12- to<br>18-in. Depth | 0- to<br>6-in. Depth | 6- to<br>12-in. Depth | 12- to<br>18-in. Depth | 0- to<br>6-in. Depth |               |                         |                                   | 6- to<br>12-in. Depth | 12- to<br>18-in. Depth | 0- to<br>6-in. Depth | 6- to<br>12-in. Depth | 12- to<br>18-in. Depth | 0- to<br>6-in. Depth | 6- to<br>12-in. Depth |               |                         |                                   |
| Sample<br>Date  | Depth                 | Depth                  | Depth                | Depth                 | Depth                  | Depth                | Depth         | Depth                   | Sample<br>Date                    | Depth                 | Depth                  | Depth                | Depth                 | Depth                  | Depth                |                       |               |                         |                                   |
| Site 165, Pine Co., Minn.<br>Onamia SL/SL (SM)          |                       |                        |                      |                       |                        |                      |               |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 6/2/54  | 13.5                  | 14.4                   | 22.7                 | 2.59                  | 2.09                   | 266                  | ----          |                         | 6/2/54                            | 15.4                  | 13.2                   | 11.3                 | 1.27                  | 1.35                   | 95                   | ----                  |               |                         |                                   |
| 8/6/54  | 23.5                  | 10.5                   | 15.2                 | 1.71                  | 1.42                   | 300                  | ----          |                         | 8/6/54                            | 11.4                  | 3.3                    | 5.5                  | 0.34                  | 0.30                   | 175                  | ----                  |               |                         |                                   |
| 8/26/54   | 24.7                  | 21.3                   | 20.6                 | 1.32                  | 1.37                   | 300                  | ----          |                         | 8/26/54                           | 20.5                  | 12.7                   | 10.4                 | 1.70                  | 1.31                   | 123                  | ----                  |               |                         |                                   |
| 10/5/54   | 22.1                  | 27.3                   | 21.7                 | 2.34                  | 2.13                   | 268                  | NT            |                         | 10/5/54                           | 20.1                  | 13.9                   | 12.0                 | 1.66                  | 1.10                   | 95                   | NT                    |               |                         |                                   |
| 10/31/54  | 31.1                  | 20.5                   | 20.7                 | 2.27                  | 1.79                   | 300                  | ----          |                         | 10/31/54                          | 20.2                  | 13.0                   | 11.0                 | 1.72                  | 1.53                   | 155                  | ----                  |               |                         |                                   |
| 4/23/55   | 33.0                  | 23.1                   | 22.4                 | 2.45                  | 1.55                   | 306                  | VT            |                         | 4/23/55                           | 21.1                  | 12.1                   | 10.3                 | 1.31                  | 0.96                   | 123                  | NT*                   |               |                         |                                   |
| 5/19/55   | 17                    | 14.5                   | 16.0                 | 1.25                  | 1.25                   | 300                  | NT            |                         | 5/20/55                           | 14.7                  | 9.8                    | 9.7                  | 1.22                  | 0.73                   | 214                  | ----                  |               |                         |                                   |
| 6/5/55  | 25.3                  | 20.5                   | 22.7                 | 1.45                  | 1.76                   | 300                  | ----          |                         | 6/8/55                            | 14.5                  | 9.5                    | 7.8                  | 1.20                  | 0.75                   | 110                  | ----                  |               |                         |                                   |
| Site 166, Pine Co., Minn.<br>Onamia SL/SL (V)           |                       |                        |                      |                       |                        |                      |               |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 6/2/54  | 19.7                  | 15.6                   | 12.1                 | 1.76                  | 1.49                   | 227                  | ----          |                         | 6/2/54                            | -----                 | -----                  | -----                | -----                 | -----                  | 137                  | ----                  |               |                         |                                   |
| 8/6/54  | 10.6                  | 9.7                    | 11.7                 | 0.33                  | 0.72                   | 300                  | ----          |                         | 8/6/54                            | 25.3                  | 16.5                   | 14.5                 | 2.01                  | 1.56                   | 177                  | ----                  |               |                         |                                   |
| 8/26/54   | 17.2                  | 14.3                   | 9.7                  | 1.52                  | 1.36                   | 300                  | ----          |                         | 8/26/54                           | 26.8                  | 15.1                   | 13.5                 | 2.03                  | 1.43                   | 215                  | ----                  |               |                         |                                   |
| 10/5/54   | 13.5                  | 15.7                   | 12.1                 | 1.17                  | 1.52                   | 300                  | NT            |                         | 10/5/54                           | 22.7                  | 17.8                   | 10.5                 | 2.25                  | 1.67                   | 210                  | NT                    |               |                         |                                   |
| 10/31/54  | 13.5                  | 15.7                   | 10.6                 | 1.63                  | 1.52                   | 300                  | ----          |                         | 10/31/54                          | 25.3                  | 18.2                   | 14.2                 | 2.02                  | 1.73                   | 183                  | ----                  |               |                         |                                   |
| 4/23/55   | 20.7                  | 16.7                   | 12.3                 | 1.82                  | 1.61                   | 300                  | NT            |                         | 4/23/55                           | FW                    | FW                     | FW                   | FW                    | FW                     | 153                  | ----                  |               |                         |                                   |
| 5/26/55   | 13.6                  | 12.5                   | 9.3                  | 1.20                  | 1.22                   | 270                  | NT            |                         | 5/20/55                           | 24.1                  | 15.4                   | 13.4                 | 1.38                  | 1.46                   | 256                  | NT                    |               |                         |                                   |
| 6/5/55  | 17.2                  | 11.7                   | 1.7                  | 1.55                  | 1.12                   | 256                  | ----          |                         | 6/8/55                            | 27.5                  | 15.4                   | 14.9                 | 2.30                  | 1.46                   | 213                  | ----                  |               |                         |                                   |
| Site 168, Washburn Co., Wis.<br>Unclassified SL/SL (SM) |                       |                        |                      |                       |                        |                      |               |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 6/2/54  | 13.3                  | 9.0                    | 5.3                  | 1.21                  | 1.02                   | 285                  | ----          |                         | 6/2/54                            | 19.8                  | 13.7                   | 9.5                  | 1.53                  | 1.22                   | 246                  | ----                  |               |                         |                                   |
| 8/6/54  | 10.3                  | 8.2                    | 7.1                  | 1.01                  | 0.37                   | 300                  | ----          |                         | 8/6/54                            | 13.0                  | 10.2                   | 6.2                  | 1.01                  | 0.30                   | 300                  | ----                  |               |                         |                                   |
| 8/26/54   | 10.3                  | 7.5                    | 4.3                  | 1.00                  | 0.35                   | 300                  | ----          |                         | 8/26/54                           | 25.5                  | 10.6                   | 6.0                  | 1.97                  | 0.94                   | 300                  | ----                  |               |                         |                                   |
| 10/5/54   | 12.2                  | 9.6                    | 9.3                  | 1.13                  | 1.02                   | 300                  | NT            |                         | 10/5/54                           | 17.1                  | 12.4                   | 8.5                  | 1.32                  | 1.10                   | 251                  | NT                    |               |                         |                                   |
| 11/1/54   | 13.9                  | 7.7                    | 4.3                  | 1.27                  | 0.32                   | 300                  | ----          |                         | 11/1/54                           | 17.8                  | 12.2                   | 9.5                  | 1.38                  | 1.08                   | 268                  | ----                  |               |                         |                                   |
| 4/23/55   | 14.4                  | 10.8                   | 5.5                  | 1.34                  | 1.15                   | 300                  | NT            |                         | 4/23/55                           | 20.2                  | 12.6                   | 9.5                  | 1.56                  | 1.12                   | 274                  | NT                    |               |                         |                                   |
| 5/20/55   | 1.2                   | 3.5                    | 1.4                  | 0.39                  | 0.37                   | 300                  | NT            |                         | 5/20/55                           | 12.0                  | 7.5                    | 6.3                  | 0.93                  | 0.67                   | 300                  | NT                    |               |                         |                                   |
| 6/8/55  | 13.6                  | 9.0                    | 4.6                  | 1.25                  | 0.36                   | 300                  | ----          |                         | 6/8/55                            | 21.3                  | 15.4                   | 1.1                  | 1.65                  | 1.37                   | 297                  | ----                  |               |                         |                                   |
| Site 170, Washburn Co., Wis.<br>Unclassified SIL/L (ML) |                       |                        |                      |                       |                        |                      |               |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 6/2/54  | 37.7                  | 32.3                   | 23.0                 | 2.41                  | 2.64                   | 167                  | ----          |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 8/6/54  | 30.4                  | 23.5                   | 18.4                 | 1.33                  | 1.32                   | 142                  | ----          |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 8/26/54   | 23.1                  | 24.7                   | 19.7                 | 1.77                  | 2.02                   | 206                  | ----          |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 10/5/54   | 33.0                  | 23.2                   | 20.0                 | 2.14                  | 2.38                   | 153                  | 0.39          |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 11/1/54   | 35.7                  | 27.8                   | 17.5                 | 2.28                  | 2.27                   | 163                  | ----          |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 4/23/55   | 43.3                  | 33.8                   | 23.8                 | 2.77                  | 2.76                   | 148                  | 0.66          |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 5/20/55   | 30.7                  | 26.4                   | 21.4                 | 1.35                  | 2.15                   | 21                   | 0.67          |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |
| 6/18/55   | 35.0                  | 29.4                   | 21.5                 | 2.42                  | 2.40                   | 118                  | ----          |                         |                                   |                       |                        |                      |                       |                        |                      |                       |               |                         |                                   |

Note: NT = no test. \* Vibrated remolding test.  
FW = free water.



Table B3d  
Soil Moisture Content and Strength Data of Survey Sites

| Intermountain Region         |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
|------------------------------|-----------------------|--------------|---------------|-------------|--------------|---------------|------------|-------------------|--------------------------|-------------|-----------------------|--------------|---------------|-------------|--------------|---------------|------------|-------------------|--------------------------|
| Sample Date                  | Soil Moisture Content |              |               |             |              |               | Cone Index | Remold- ing Index | Depth to Water Table in. | Sample Date | Soil Moisture Content |              |               |             |              |               | Cone Index | Remold- ing Index | Depth to Water Table in. |
|                              | Percent Weight Basis  |              |               | in./6 in.   |              |               |            |                   |                          |             | Percent Weight Basis  |              |               | in./5 in.   |              |               |            |                   |                          |
|                              | 0- to 6-in.           | 6- to 12-in. | 12- to 18-in. | 0- to 6-in. | 6- to 12-in. | 12- to 18-in. |            |                   |                          |             | 0- to 6-in.           | 6- to 12-in. | 12- to 18-in. | 0- to 6-in. | 6- to 12-in. | 12- to 18-in. |            |                   |                          |
|                              | Depth                 | Depth        | Depth         | Depth       | Depth        | Depth         |            |                   |                          |             | Depth                 | Depth        | Depth         | Depth       | Depth        | Depth         |            |                   |                          |
| Site 1, Davis Co., Utah      |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Unclassified L/L (ML)        |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/30/54                      | 35.6                  | 24.8         | 21.9          | 2.11        | 1.76         | 162           | ----       | ----              | 6/30/54                  | 15.5        | 14.7                  | 12.9         | 1.12          | 1.15        | 300          | ----          | ----       |                   |                          |
| 8/3/54                       | 18.8                  | 15.6         | 13.7          | 1.12        | 1.10         | 271           | ----       | ----              | 8/3/54                   | 4.4         | 4.4                   | 2.8          | 0.32          | 0.34        | 300          | ----          | ----       |                   |                          |
| 8/31/54                      | 13.3                  | 11.8         | 11.3          | 0.79        | 0.84         | 281           | ----       | ----              | 8/31/54                  | 3.4         | 5.1                   | 4.7          | 0.24          | 0.40        | 212          | ----          | ----       |                   |                          |
| 9/23/54                      | 21.2                  | 14.0         | 11.9          | 1.26        | 0.99         | 300           | ----       | ----              | 9/28/54                  | 17.3        | 8.0                   | 4.2          | 1.25          | 0.62        | 300          | ----          | ----       |                   |                          |
| 10/7/54                      | 24.1                  | 13.2         | 12.0          | 1.43        | 0.93         | 280           | ----       | ----              | 10/7/54                  | 16.3        | 11.8                  | 4.5          | 1.17          | 0.32        | 243          | ----          | ----       |                   |                          |
| 5/15/55                      | 33.8                  | 27.2         | 23.3          | 2.01        | 1.93         | 111           | 0.66       | ----              | 6/14/55                  | 20.9        | 16.8                  | 15.6         | 1.50          | 1.31        | 229          | ----          | ----       |                   |                          |
| 5/13/55                      | 35.4                  | 26.6         | 23.7          | 2.10        | 1.88         | 144           | 1.62       | ----              |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/14/55                      | 38.6                  | 25.2         | 25.3          | 2.29        | 1.78         | 132           | ----       | ----              |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Site 2, Davis Co., Utah      |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Unclassified SL/SL (ML)      |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/25/54                      | 12.6                  | 14.6         | 13.9          | 0.93        | 1.10         | 300           | ----       | ----              | 6/25/54                  | 15.2        | 18.0                  | 22.1         | 1.30          | 1.60        | 300          | ----          | ----       |                   |                          |
| 8/3/54                       | 8.8                   | 10.8         | 9.2           | 0.65        | 0.52         | 300           | ----       | ----              | 8/3/54                   | 5.4         | 3.4                   | 10.0         | 0.55          | 0.83        | 300          | ----          | ----       |                   |                          |
| 8/31/54                      | 2.7                   | 6.2          | 7.5           | 0.20        | 0.47         | 300           | ----       | ----              | 8/31/54                  | 6.2         | 6.0                   | 8.1          | 0.53          | 0.53        | 300          | ----          | ----       |                   |                          |
| 9/28/54                      | 20.1                  | 11.5         | 8.5           | 1.48        | 0.87         | 300           | ----       | ----              | 9/28/54                  | 15.5        | 11.4                  | 8.6          | 1.33          | 1.01        | 293          | ----          | ----       |                   |                          |
| 10/7/54                      | 22.3                  | 11.6         | 8.4           | 1.65        | 0.88         | 273           | ----       | ----              | 10/7/54                  | 17.6        | 14.5                  | 9.3          | 1.51          | 1.29        | 254          | ----          | ----       |                   |                          |
| 5/13/55                      | 36.5                  | 31.0         | 28.4          | 2.69        | 2.34         | 142           | 0.75†      | ----              | 5/13/55                  | 28.7        | 27.1                  | 39.7         | 2.46          | 2.41        | 114          | ----          | 12         |                   |                          |
| 6/14/55                      | 38.5                  | 28.4         | 48.5          | 2.84        | 2.15         | 216           | ----       | ----              | 6/14/55                  | 28.6        | 27.9                  | 27.8         | 2.45          | 2.48        | 152          | NT            | ----       |                   |                          |
| Site 3, Davis Co., Utah      |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Unclassified L/L (ML)        |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/25/54                      | 12.6                  | 14.6         | 13.9          | 0.93        | 1.10         | 300           | ----       | ----              | 6/25/54                  | 15.2        | 18.0                  | 22.1         | 1.30          | 1.60        | 300          | ----          | ----       |                   |                          |
| 8/3/54                       | 8.8                   | 10.8         | 9.2           | 0.65        | 0.52         | 300           | ----       | ----              | 8/3/54                   | 5.4         | 3.4                   | 10.0         | 0.55          | 0.83        | 300          | ----          | ----       |                   |                          |
| 8/31/54                      | 2.7                   | 6.2          | 7.5           | 0.20        | 0.47         | 300           | ----       | ----              | 8/31/54                  | 6.2         | 6.0                   | 8.1          | 0.53          | 0.53        | 300          | ----          | ----       |                   |                          |
| 9/28/54                      | 20.1                  | 11.5         | 8.5           | 1.48        | 0.87         | 300           | ----       | ----              | 9/28/54                  | 15.5        | 11.4                  | 8.6          | 1.33          | 1.01        | 293          | ----          | ----       |                   |                          |
| 10/7/54                      | 22.3                  | 11.6         | 8.4           | 1.65        | 0.88         | 273           | ----       | ----              | 10/7/54                  | 17.6        | 14.5                  | 9.3          | 1.51          | 1.29        | 254          | ----          | ----       |                   |                          |
| 5/13/55                      | 36.5                  | 31.0         | 28.4          | 2.69        | 2.34         | 142           | 0.75†      | ----              | 5/13/55                  | 28.7        | 27.1                  | 39.7         | 2.46          | 2.41        | 114          | ----          | 12         |                   |                          |
| 6/14/55                      | 38.5                  | 28.4         | 48.5          | 2.84        | 2.15         | 216           | ----       | ----              | 6/14/55                  | 28.6        | 27.9                  | 27.8         | 2.45          | 2.48        | 152          | NT            | ----       |                   |                          |
| Site 4, Davis Co., Utah      |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Unclassified L/L (CL)        |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/25/54                      | 12.6                  | 14.6         | 13.9          | 0.93        | 1.10         | 300           | ----       | ----              | 6/25/54                  | 15.2        | 18.0                  | 22.1         | 1.30          | 1.60        | 300          | ----          | ----       |                   |                          |
| 8/3/54                       | 8.8                   | 10.8         | 9.2           | 0.65        | 0.52         | 300           | ----       | ----              | 8/3/54                   | 5.4         | 3.4                   | 10.0         | 0.55          | 0.83        | 300          | ----          | ----       |                   |                          |
| 8/31/54                      | 2.7                   | 6.2          | 7.5           | 0.20        | 0.47         | 300           | ----       | ----              | 8/31/54                  | 6.2         | 6.0                   | 8.1          | 0.53          | 0.53        | 300          | ----          | ----       |                   |                          |
| 9/28/54                      | 20.1                  | 11.5         | 8.5           | 1.48        | 0.87         | 300           | ----       | ----              | 9/28/54                  | 15.5        | 11.4                  | 8.6          | 1.33          | 1.01        | 293          | ----          | ----       |                   |                          |
| 10/7/54                      | 22.3                  | 11.6         | 8.4           | 1.65        | 0.88         | 273           | ----       | ----              | 10/7/54                  | 17.6        | 14.5                  | 9.3          | 1.51          | 1.29        | 254          | ----          | ----       |                   |                          |
| 5/13/55                      | 36.5                  | 31.0         | 28.4          | 2.69        | 2.34         | 142           | 0.75†      | ----              | 5/13/55                  | 28.7        | 27.1                  | 39.7         | 2.46          | 2.41        | 114          | ----          | 12         |                   |                          |
| 6/14/55                      | 38.5                  | 28.4         | 48.5          | 2.84        | 2.15         | 216           | ----       | ----              | 6/14/55                  | 28.6        | 27.9                  | 27.8         | 2.45          | 2.48        | 152          | NT            | ----       |                   |                          |
| Site 5, Davis Co., Utah      |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Farmington SL/SL (CL)        |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/25/54                      | 33.2                  | 35.3         | 35.4          | 4.36        | 2.82         | 150           | 0.88       | 20                | 6/25/54                  | 18.4        | 10.8                  | 12.3         | 1.42          | 0.77        | 300          | ----          | ----       |                   |                          |
| 8/3/54                       | 58.7                  | 24.3         | 26.5          | 2.75        | 1.74         | 228           | ----       | ----              | 8/3/54                   | 30.7        | 11.3                  | 9.8          | 2.38          | 1.01        | 264          | ----          | ----       |                   |                          |
| 8/26/54                      | 33.7                  | 22.3         | 24.8          | 1.58        | 1.78         | 300           | ----       | ----              | 8/26/54                  | 10.9        | 11.3                  | 12.1         | 0.54          | 1.01        | 300          | ----          | ----       |                   |                          |
| 9/30/54                      | 49.1                  | 21.1         | 29.7          | 2.30        | 1.68         | 173           | ----       | ----              | 9/30/54                  | 14.6        | 9.8                   | 8.7          | 1.13          | 0.88        | 300          | ----          | ----       |                   |                          |
| 10/2/54                      | 35.8                  | 35.0         | 38.4          | 4.48        | 2.73         | 144           | 0.31       | 6                 | 10/2/54                  | 33.6        | 24.2                  | 22.8         | 2.60          | 2.16        | 119          | 0.94          | ----       |                   |                          |
| 3/17/55                      | 24.7                  | 42.9         | 40.3          | 4.43        | 3.42         | 127           | 0.82       | 1                 | 3/17/55                  | 29.4        | 23.6                  | 24.2         | 2.28          | 2.11        | 37           | 0.76          | ----       |                   |                          |
| 4/12/55                      | 38.9                  | 42.1         | 41.1          | 4.16        | 3.36         | 162           | ----       | 4                 | 4/12/55                  | 33.1        | 25.4                  | 24.5         | 2.56          | 2.27        | 104          | 0.69          | ----       |                   |                          |
| 4/28/55                      | ----                  | ----         | ----          | ----        | ----         | ----          | ----       | 1                 | 4/28/55                  | 18.9        | 20.3                  | 22.7         | 1.46          | 1.81        | 172          | ----          | 12 DRY     |                   |                          |
| 5/16/55                      | 73.2                  | 38.5         | 40.0          | 3.43        | 3.07         | 137           | ----       | 12                | 5/16/55                  |             |                       |              |               |             |              |               |            |                   |                          |
| Site 6, Davis Co., Utah      |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Fronton SL/SL (CL)           |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/25/54                      | 12.6                  | 14.6         | 13.9          | 0.93        | 1.10         | 300           | ----       | ----              | 6/25/54                  | 15.2        | 18.0                  | 22.1         | 1.30          | 1.60        | 300          | ----          | ----       |                   |                          |
| 8/3/54                       | 8.8                   | 10.8         | 9.2           | 0.65        | 0.52         | 300           | ----       | ----              | 8/3/54                   | 5.4         | 3.4                   | 10.0         | 0.55          | 0.83        | 300          | ----          | ----       |                   |                          |
| 8/31/54                      | 2.7                   | 6.2          | 7.5           | 0.20        | 0.47         | 300           | ----       | ----              | 8/31/54                  | 6.2         | 6.0                   | 8.1          | 0.53          | 0.53        | 300          | ----          | ----       |                   |                          |
| 9/28/54                      | 20.1                  | 11.5         | 8.5           | 1.48        | 0.87         | 300           | ----       | ----              | 9/28/54                  | 15.5        | 11.4                  | 8.6          | 1.33          | 1.01        | 293          | ----          | ----       |                   |                          |
| 10/7/54                      | 22.3                  | 11.6         | 8.4           | 1.65        | 0.88         | 273           | ----       | ----              | 10/7/54                  | 17.6        | 14.5                  | 9.3          | 1.51          | 1.29        | 254          | ----          | ----       |                   |                          |
| 5/13/55                      | 36.5                  | 31.0         | 28.4          | 2.69        | 2.34         | 142           | 0.75†      | ----              | 5/13/55                  | 28.7        | 27.1                  | 39.7         | 2.46          | 2.41        | 114          | ----          | 12 DRY     |                   |                          |
| 6/14/55                      | 38.5                  | 28.4         | 48.5          | 2.84        | 2.15         | 216           | ----       | ----              | 6/14/55                  | 28.6        | 27.9                  | 27.8         | 2.45          | 2.48        | 152          | NT            | ----       |                   |                          |
| Site 7, Davis Co., Utah      |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Pimpenog L/L (CL-ML)         |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 7/1/54                       | 20.6                  | 26.3         | 20.0          | 1.69        | 2.32         | 300           | ----       | ----              | 7/1/54                   | 8.9         | 12.7                  | 17.6         | 0.83          | 1.26        | 300          | ----          | ----       |                   |                          |
| 8/5/54                       | 18.1                  | 6.5          | 6.5           | 1.43        | 0.56         | 300           | ----       | ----              | 8/5/54                   | 11.8        | 3.7                   | 3.0          | 1.10          | 0.39        | 300          | ----          | ----       |                   |                          |
| 8/26/54                      | 6.8                   | 5.2          | 6.1           | 0.56        | 0.51         | 300           | ----       | ----              | 8/31/54                  | 2.8         | 7.4                   | 13.2         | 0.26          | 0.73        | 300          | ----          | ----       |                   |                          |
| 9/30/54                      | 7.0                   | 6.8          | 7.5           | 0.58        | 0.59         | 300           | ----       | ----              | 9/28/54                  | 5.3         | 3.7                   | 15.4         | 0.50          | 0.37        | 300          | ----          | ----       |                   |                          |
| 3/17/55                      | 24.7                  | 20.3         | 19.4          | 2.03        | 1.81         | 200           | NT         | ----              | 3/15/55                  | 18.0        | 13.5                  | 17.5         | 1.68          | 1.34        | 300          | 0.35†         | ----       |                   |                          |
| 4/12/55                      | 24.3                  | 20.3         | 20.0          | 2.00        | 1.80         | 186           | MT         | ----              | 4/12/55                  | 17.3        | 15.7                  | 18.2         | 1.62          | 1.55        | 300          | ----          | ----       |                   |                          |
| 4/28/55                      | 23.1                  | 20.5         | 18.6          | 1.90        | 1.77         | 155           | 0.34       | ----              | 4/28/55                  | 16.0        | 12.9                  | 16.5         | 1.50          | 1.28        | 300          | ----          | ----       |                   |                          |
| 5/16/55                      | 13.7                  | 17.2         | 16.8          | 1.13        | 1.44         | 276           | NT         | ----              | 5/16/55                  | 10.6        | 12.4                  | 13.5         | 0.99          | 1.23        | 300          | ----          | ----       |                   |                          |
| Site 8, Salt Lake Co., Utah  |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Airport SL/SL (CL)           |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/29/54                      | 8.9                   | 12.7         | 17.6          | 0.83        | 1.26         | 300           | ----       | ----              | 6/29/54                  | 8.9         | 12.7                  | 17.6         | 0.83          | 1.26        | 300          | ----          | ----       |                   |                          |
| 8/3/54                       | 11.8                  | 3.7          | 3.0           | 1.10        | 0.39         | 300           | ----       | ----              | 8/3/54                   | 11.8        | 3.7                   | 3.0          | 1.10          | 0.39        | 300          | ----          | ----       |                   |                          |
| 8/31/54                      | 2.8                   | 7.4          | 13.2          | 0.26        | 0.73         | 300           | ----       | ----              | 8/31/54                  | 2.8         | 7.4                   | 13.2         | 0.26          | 0.73        | 300          | ----          | ----       |                   |                          |
| 9/28/54                      | 5.3                   | 3.7          | 15.4          | 0.50        | 0.37         | 300           | ----       | ----              | 9/28/54                  | 5.3         | 3.7                   | 15.4         | 0.50          | 0.37        | 300          | ----          | ----       |                   |                          |
| 3/15/55                      | 18.0                  | 13.5         | 17.5          | 1.68        | 1.34         | 300           | 0.35†      | ----              | 3/15/55                  | 18.0        | 13.5                  | 17.5         | 1.68          | 1.34        | 300          | 0.35†         | ----       |                   |                          |
| 4/12/55                      | 17.3                  | 15.7         | 18.2          | 1.62        | 1.55         | 300           | ----       | ----              | 4/12/55                  | 17.3        | 15.7                  | 18.2         | 1.62          | 1.55        | 300          | ----          | ----       |                   |                          |
| 4/28/55                      | 16.0                  | 12.9         | 16.5          | 1.50        | 1.28         | 300           | ----       | ----              | 4/28/55                  | 16.0        | 12.9                  | 16.5         | 1.50          | 1.28        | 300          | ----          | ----       |                   |                          |
| 5/16/55                      | 10.6                  | 12.4         | 13.5          | 0.99        | 1.23         | 300           | ----       | ----              | 5/16/55                  | 10.6        | 12.4                  | 13.5         | 0.99          | 1.23        | 300          | ----          | ----       |                   |                          |
| Site 9, Salt Lake Co., Utah  |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Saltair SL/SL (CL)           |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/23/54                      | 26.1                  | 22.0         | 22.2          | 1.99        | 2.11         | 175           | ----       | ----              | 6/23/54                  | 15.7        | 16.8                  | 21.4         | 1.29          | 1.51        | 300          | ----          | ----       |                   |                          |
| 8/3/54                       | 23.5                  | 13.7         | 20.0          | 1.72        | 1.82         | 235           | ----       | ----              | 8/3/54                   | 8.7         | 15.2                  | 13.4         | 0.72          | 1.37        | 300          | ----          | ----       |                   |                          |
| 8/31/54                      | 22.3                  | 21.6         | 21.7          | 1.70        | 2.07         | 223           | ----       | ----              | 8/31/54                  | 9.2         | 15.7                  | 13.7         | 0.76          | 1.41        | 300          | ----          | ----       |                   |                          |
| 9/28/54                      | 23.1                  | 20.1         | 20.8          | 1.76        | 1.93         | 225           | ----       | ----              | 9/28/54                  | 10.2        | 14.5                  | 17.2         | 0.84          | 1.30        | 300          | ----          | ----       |                   |                          |
| 12/2/54                      | 29.7                  | 23.2         | 23.7          | 2.26        | 2.83         | 177           | 0.66       | ----              | 12/2/54                  | 20.1        | 17.6                  | 16.4         | 1.65          | 1.58        | 300          | NT            | ----       |                   |                          |
| 3/15/55                      | ----                  | ----         | ----          | ----        | ----         | 98            | ----       | ----              | 3/15/55                  | 24.4        | 13.3                  | 17.8         | 2.01          | 1.74        | 295          | ----          | ----       |                   |                          |
| 3/31/55                      | 31.6                  | 23.9         | 24.0          | 2.41        | 2.29         | 137           | 0.60       | 18                | 3/31/55                  | 13.3        | 19.1                  | 23.7         | 1.53          | 1.72        | 300          | ----          | ----       |                   |                          |
| 4/12/55                      | 35.7                  | 25.6         | 24.8          | 2.72        | 2.46         | 113           | ----       | 12                | 4/12/55                  | 15.2        | 17.4                  | 23.1         | 1.25          | 1.57        | 300          | ----          | ----       |                   |                          |
| 4/28/55                      | ----                  | ----         | ----          | ----        | ----         | ----          | ----       | ----              | 4/28/55                  | 15.2        | 17.4                  | 23.1         | 1.25          | 1.57        | 300          | ----          | ----       |                   |                          |
| 5/10/55                      | 27.6                  | 23.0         | 22.6          | 2.21        | 2.21         | 170           | ----       | 31                | 5/10/55                  |             |                       |              |               |             |              |               |            |                   |                          |
| Site 10, Salt Lake Co., Utah |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| Terminal SL/SL (CL)          |                       |              |               |             |              |               |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |
| 6/23/54                      | 15.7                  | 16.8         | 21.4          | 1.29        | 1.51         | 300           | ----       | ----              | 6/23/54                  | 15.7        | 16.8                  | 21.4         | 1.29          | 1.51        | 300          | ----          | ----       |                   |                          |
| 8/3/54                       | 8.7                   | 15.2         | 13.4          | 0.72        | 1.37         | 300           | ----       | ----              | 8/3/54                   | 8.7         | 15.2                  | 13.4         | 0.72          | 1.37        | 300          | ----          | ----       |                   |                          |
| 8/31/54                      | 9.2                   | 15.7         | 13.7          | 0.76        | 1.41         | 300           | ----       | ----              | 8/31/54                  | 9.2         | 15.7                  | 13.7         | 0.76          | 1.41        | 300          | ----          | ----       |                   |                          |
| 9/28/54                      | 10.2                  | 14.5         | 17.2          | 0.84        | 1.30         | 300           | ----       | ----              | 9/28/54                  | 10.2        | 14.5                  | 17.2         | 0.84          | 1.30        | 300          | ----          | ----       |                   |                          |
| 3/15/55                      | 20.1                  | 17.6         | 16.4          | 1.65        | 1.58         | 300           | NT         | ----              | 3/15/55                  | 20.1        | 17.6                  | 16.4         | 1.65          | 1.58        | 300          | NT            | ----       |                   |                          |
| 4/12/55                      | 24.4                  | 13.3         | 17.8          | 2.01        | 1.74         | 29            |            |                   |                          |             |                       |              |               |             |              |               |            |                   |                          |



Table B3d (Continued)  
Intermountain Region (Continued)

| Sample Date  | Soil Moisture Content   |                          |                           |                         |                          |                           | Cone Index | Remold-<br>ing Index | Depth to<br>Water Table<br>in. | Sample Date | Soil Moisture Content   |                          |                           |                         |                          |                           | Cone Index | Remold-<br>ing Index | Depth to<br>Water Table<br>in. |
|--|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|------------|----------------------|--------------------------------|-------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|------------|----------------------|--------------------------------|
|  | Percent Weight Basis    |                          |                           |                         |                          |                           |            |                      |                                |             | Percent Weight Basis    |                          |                           |                         |                          |                           |            |                      |                                |
|  | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth |            |                      |                                |             | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth |            |                      |                                |
| Site 15, Salt Lake Co., Utah                                 |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Terminal SIL/L (CL)  |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 6/30/54  | 26.8                    | 24.1                     | 17.6                      | 2.22                    | 2.08                     | 300                       | ----       | ----                 | 7/21/54                        | 26.4        | 22.4                    | 26.4                     | 2.19                      | 2.11                    | 165                      | ----                      | ----       |                      |                                |
| 8/3/54   | 11.8                    | 12.3                     | 12.0                      | 0.78                    | 1.06                     | 300                       | ----       | ----                 | 8/4/54                         | 25.3        | 21.7                    | 23.7                     | 2.14                      | 2.06                    | 144                      | ----                      | ----       |                      |                                |
| 9/31/54  | 15.3                    | 12.4                     | 8.8                       | 1.32                    | 1.07                     | 300                       | ----       | ----                 | 9/30/54                        | 14.0        | 16.7                    | 21.3                     | 1.16                      | 1.54                    | 300                      | ----                      | ----       |                      |                                |
| 10/23/54   | 13.5                    | 10.5                     | 3.4                       | 1.12                    | 0.73                     | 300                       | ----       | ----                 | 10/23/54                       | 24.8        | 25.0                    | 26.0                     | 2.05                      | 2.26                    | 105                      | ----                      | ----       |                      |                                |
| 11/15/54   | 27.3                    | 27.1                     | 27.5                      | 2.43                    | 2.34                     | 176                       | 0.26       | 13                   | 11/16/55                       | 23.2        | 28.4                    | 31.9                     | 2.42                      | 2.68                    | 171                      | 0.60                      | ----       |                      |                                |
| 12/15/54   | 29.0                    | 30.0                     | 32.0                      | 2.40                    | 2.59                     | 136                       | 0.14       | 10                   | 12/13/55                       | 29.1        | 28.5                    | 18.4                     | 2.41                      | 2.68                    | 93                       | 0.70                      | ----       |                      |                                |
| 1/23/55  | 33.3                    | 28.2                     | 23.4                      | 2.30                    | 2.44                     | 122                       | 0.96       | 5                    | 1/23/55                        | 22.3        | 25.3                    | 30.9                     | 1.85                      | 2.38                    | 177                      | ----                      | ----       |                      |                                |
| 5/16/55  | 32.4                    | 23.2                     | 30.6                      | 2.68                    | 2.44                     | 130                       | ----       | 12                   | 5/17/55                        | 28.6        | 25.4                    | 27.3                     | 2.37                      | 2.37                    | 120                      | 0.61                      | ----       |                      |                                |
| Irrigated before 9/29/54, 3/16/55, 4/13/55, 4/23/55, 5/17/55 |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Site 16, Utah Co., Utah                                      |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Kirkham SIL/SIL (CL)   |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 7/21/54  | 8.2                     | 4.8                      | 10.7                      | 0.53                    | 0.75                     | 300                       | ----       | ----                 | 7/21/54                        | 13.9        | 13.9                    | 17.5                     | 1.04                      | 1.05                    | 300                      | ----                      | ----       |                      |                                |
| 8/4/54   | 6.0                     | 7.0                      | 6.3                       | 0.43                    | 0.60                     | 300                       | ----       | ----                 | 8/4/54                         | 3.4         | 13.0                    | 12.3                     | 0.26                      | 0.28                    | 300                      | ----                      | ----       |                      |                                |
| 9/30/54  | 4.3                     | 8.6                      | 5.5                       | 0.31                    | 0.73                     | 300                       | ----       | ----                 | 9/30/54                        | 9.8         | 12.1                    | 11.7                     | 0.73                      | 0.71                    | 300                      | ----                      | ----       |                      |                                |
| 10/23/54   | 12.4                    | 7.6                      | 8.0                       | 0.33                    | 0.65                     | 300                       | ----       | ----                 | 10/23/54                       | 18.8        | 13.2                    | 15.7                     | 1.41                      | 1.00                    | 300                      | ----                      | ----       |                      |                                |
| 11/15/54   | 33.3                    | 23.1                     | 21.2                      | 2.40                    | 1.77                     | 143                       | 0.54       | ----                 | 11/15/54                       | 32.1        | 30.3                    | 32.3                     | 2.41                      | 2.29                    | 171                      | 0.70                      | ----       |                      |                                |
| 12/15/54   | 21.4                    | 18.2                     | 17.7                      | 1.54                    | 1.55                     | 180                       | NT         | ----                 | 12/15/54                       | 30.9        | 29.9                    | 30.0                     | 2.32                      | 2.26                    | 209                      | NT                        | ----       |                      |                                |
| 1/23/55  | 21.5                    | 18.7                     | 17.1                      | 1.55                    | 1.52                     | 213                       | NT         | ----                 | 1/23/55                        | 23.6        | 24.1                    | 22.3                     | 1.77                      | 1.92                    | 277                      | ----                      | ----       |                      |                                |
| 5/17/55  | 15.4                    | 15.0                     | 13.6                      | 1.40                    | 1.28                     | 300                       | ----       | ----                 | 5/17/55                        | 24.4        | 24.5                    | 13.0                     | 1.33                      | 1.85                    | 300                      | ----                      | ----       |                      |                                |
| Site moved before 9/29/54                                    |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Site 17, Utah Co., Utah                                      |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Welby SIL/L (CL)   |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 7/21/54  | -5.1                    | -2.4                     | 40.0                      | 3.13                    | 2.28                     | 113                       | ----       | ----                 | 7/21/54                        | 14.2        | 13.5                    | 10.8                     | 1.41                      | 1.24                    | 300                      | ----                      | ----       |                      |                                |
| 8/4/54   | -2.7                    | 40.2                     | 39.1                      | 3.02                    | 2.82                     | 117                       | ----       | ----                 | 8/4/54                         | 8.4         | 13.2                    | 15.0                     | 0.83                      | 1.21                    | 300                      | ----                      | ----       |                      |                                |
| 9/30/54  | 27.5                    | 33.8                     | 33.6                      | 2.10                    | 2.37                     | ----                      | ----       | ----                 | 9/30/54                        | 10.6        | 13.7                    | 13.1                     | 1.05                      | 1.26                    | 300                      | ----                      | ----       |                      |                                |
| 10/23/54   | 37.1                    | 15.2                     | 32.4                      | 2.63                    | 1.35                     | 300                       | ----       | ----                 | 10/23/54                       | 11.4        | 11.1                    | 12.9                     | 1.13                      | 1.02                    | 300                      | ----                      | ----       |                      |                                |
| 11/15/54   | 35.2                    | 40.3                     | 3.7                       | 2.70                    | 2.33                     | 156                       | NT         | 31                   | 11/16/55                       | 22.2        | 21.1                    | 27.9                     | 2.20                      | 1.24                    | 232                      | NT                        | 22         |                      |                                |
| 12/15/54   | 32.4                    | -2.4                     | 1.0                       | 2.29                    | 2.38                     | 300                       | ----       | 35                   | 12/13/55                       | 18.0        | 18.3                    | 22.9                     | 1.78                      | 1.68                    | 300                      | NT                        | 22         |                      |                                |
| 1/23/55  | 29.0                    | 32.3                     | 26.0                      | 2.05                    | 2.27                     | 228                       | ----       | DRY                  | 1/23/55                        | 16.6        | 18.1                    | 22.8                     | 1.64                      | 1.66                    | 300                      | ----                      | DRY        |                      |                                |
| 5/17/55  | 31.3                    | 31.1                     | 31.4                      | 2.22                    | 2.12                     | 215                       | ----       | 24                   | 5/17/55                        | 15.6        | 16.3                    | 19.9                     | 1.54                      | 1.50                    | 300                      | ----                      | 27         |                      |                                |
| Site 18, Utah Co., Utah                                      |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| McBeth SIL/SIL (ML)  |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 7/21/54  | 21.0                    | 20.7                     | 27.3                      | 1.73                    | 1.34                     | 300                       | ----       | ----                 | 7/21/54                        | 23.4        | 27.0                    | 25.6                     | 1.36                      | 2.04                    | 300                      | ----                      | ----       |                      |                                |
| 8/4/54   | 13.3                    | 21.3                     | 26.2                      | 1.70                    | 2.04                     | 300                       | ----       | ----                 | 8/4/54                         | 31.9        | 27.7                    | 30.0                     | 1.86                      | 2.09                    | 300                      | ----                      | ----       |                      |                                |
| 9/30/54  | 17.6                    | 15.4                     | 23.4                      | 1.50                    | 1.72                     | 300                       | ----       | ----                 | 9/30/54                        | 32.3        | 40.5                    | 31.7                     | 1.88                      | 3.06                    | 300                      | ----                      | ----       |                      |                                |
| 10/23/54   | 23.1                    | 21.3                     | 25.9                      | 1.77                    | 1.77                     | 177                       | ----       | ----                 | 10/23/54                       | 51.2        | 37.4                    | 33.1                     | 2.98                      | 2.83                    | 179                      | ----                      | ----       |                      |                                |
| 11/15/54   | 37.9                    | 21.6                     | 28.0                      | 2.38                    | 2.02                     | 163                       | 0.58       | ----                 | 11/15/54                       | 67.3        | 46.8                    | 44.3                     | ----                      | ----                    | 134                      | 0.50                      | 1          |                      |                                |
| 12/15/54   | 30.2                    | 24.6                     | 23.9                      | 2.57                    | 2.30                     | 131                       | 0.48       | ----                 | 12/15/54                       | 52.6        | 42.3                    | 40.7                     | 3.06                      | 3.20                    | 140                      | ----                      | 4          |                      |                                |
| 1/23/55  | 27.1                    | 25.4                     | 27.6                      | 2.31                    | 2.39                     | 137                       | 0.36       | 10                   | 1/23/55                        | 40.5        | 35.3                    | 34.3                     | 2.36                      | 2.67                    | 229                      | NT                        | 20         |                      |                                |
| 5/17/55  | 25.3                    | 25.3                     | 30.7                      | 2.41                    | 2.37                     | 167                       | ----       | 10                   | 5/17/55                        | 50.0        | 41.1                    | 39.3                     | 2.91                      | 3.11                    | 177                      | ----                      | 3          |                      |                                |
| Site 19, Utah Co., Utah                                      |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Welby L/L (ML)   |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 7/21/54  | -5.1                    | -2.4                     | 40.0                      | 3.13                    | 2.28                     | 113                       | ----       | ----                 | 7/21/54                        | 14.2        | 13.5                    | 10.8                     | 1.41                      | 1.24                    | 300                      | ----                      | ----       |                      |                                |
| 8/4/54   | -2.7                    | 40.2                     | 39.1                      | 3.02                    | 2.82                     | 117                       | ----       | ----                 | 8/4/54                         | 8.4         | 13.2                    | 15.0                     | 0.83                      | 1.21                    | 300                      | ----                      | ----       |                      |                                |
| 9/30/54  | 27.5                    | 33.8                     | 33.6                      | 2.10                    | 2.37                     | ----                      | ----       | ----                 | 9/30/54                        | 10.6        | 13.7                    | 13.1                     | 1.05                      | 1.26                    | 300                      | ----                      | ----       |                      |                                |
| 10/23/54   | 37.1                    | 15.2                     | 32.4                      | 2.63                    | 1.35                     | 300                       | ----       | ----                 | 10/23/54                       | 11.4        | 11.1                    | 12.9                     | 1.13                      | 1.02                    | 300                      | ----                      | ----       |                      |                                |
| 11/15/54   | 35.2                    | 40.3                     | 3.7                       | 2.70                    | 2.33                     | 156                       | NT         | 31                   | 11/16/55                       | 22.2        | 21.1                    | 27.9                     | 2.20                      | 1.24                    | 232                      | NT                        | 22         |                      |                                |
| 12/15/54   | 32.4                    | -2.4                     | 1.0                       | 2.29                    | 2.38                     | 300                       | ----       | 35                   | 12/13/55                       | 18.0        | 18.3                    | 22.9                     | 1.78                      | 1.68                    | 300                      | NT                        | 22         |                      |                                |
| 1/23/55  | 29.0                    | 32.3                     | 26.0                      | 2.05                    | 2.27                     | 228                       | ----       | DRY                  | 1/23/55                        | 16.6        | 18.1                    | 22.8                     | 1.64                      | 1.66                    | 300                      | ----                      | DRY        |                      |                                |
| 5/17/55  | 31.3                    | 31.1                     | 31.4                      | 2.22                    | 2.12                     | 215                       | ----       | 24                   | 5/17/55                        | 15.6        | 16.3                    | 19.9                     | 1.54                      | 1.50                    | 300                      | ----                      | 27         |                      |                                |
| Site 20, Utah Co., Utah                                      |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Red Rock SIL/SIL (CL-ML)                                     |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 7/21/54  | 21.0                    | 20.7                     | 27.3                      | 1.73                    | 1.34                     | 300                       | ----       | ----                 | 7/21/54                        | 23.4        | 27.0                    | 25.6                     | 1.36                      | 2.04                    | 300                      | ----                      | ----       |                      |                                |
| 8/4/54   | 13.3                    | 21.3                     | 26.2                      | 1.70                    | 2.04                     | 300                       | ----       | ----                 | 8/4/54                         | 31.9        | 27.7                    | 30.0                     | 1.86                      | 2.09                    | 300                      | ----                      | ----       |                      |                                |
| 9/30/54  | 17.6                    | 15.4                     | 23.4                      | 1.50                    | 1.72                     | 300                       | ----       | ----                 | 9/30/54                        | 32.3        | 40.5                    | 31.7                     | 1.88                      | 3.06                    | 300                      | ----                      | ----       |                      |                                |
| 10/23/54   | 23.1                    | 21.3                     | 25.9                      | 1.77                    | 1.77                     | 177                       | ----       | ----                 | 10/23/54                       | 51.2        | 37.4                    | 33.1                     | 2.98                      | 2.83                    | 179                      | ----                      | ----       |                      |                                |
| 11/15/54   | 37.9                    | 21.6                     | 28.0                      | 2.38                    | 2.02                     | 163                       | 0.58       | ----                 | 11/15/54                       | 67.3        | 46.8                    | 44.3                     | ----                      | ----                    | 134                      | 0.50                      | 1          |                      |                                |
| 12/15/54   | 30.2                    | 24.6                     | 23.9                      | 2.57                    | 2.30                     | 131                       | 0.48       | ----                 | 12/15/54                       | 52.6        | 42.3                    | 40.7                     | 3.06                      | 3.20                    | 140                      | ----                      | 4          |                      |                                |
| 1/23/55  | 27.1                    | 25.4                     | 27.6                      | 2.31                    | 2.39                     | 137                       | 0.36       | 10                   | 1/23/55                        | 40.5        | 35.3                    | 34.3                     | 2.36                      | 2.67                    | 229                      | NT                        | 20         |                      |                                |
| 5/17/55  | 25.3                    | 25.3                     | 30.7                      | 2.41                    | 2.37                     | 167                       | ----       | 10                   | 5/17/55                        | 50.0        | 41.1                    | 39.3                     | 2.91                      | 3.11                    | 177                      | ----                      | 3          |                      |                                |
| Site 21, Utah Co., Utah                                      |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Kirkham L/L (CL)   |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 7/21/54  | 21.0                    | 20.7                     | 27.3                      | 1.73                    | 1.34                     | 300                       | ----       | ----                 | 7/21/54                        | 23.4        | 27.0                    | 25.6                     | 1.36                      | 2.04                    | 300                      | ----                      | ----       |                      |                                |
| 8/4/54   | 13.3                    | 21.3                     | 26.2                      | 1.70                    | 2.04                     | 300                       | ----       | ----                 | 8/4/54                         | 31.9        | 27.7                    | 30.0                     | 1.86                      | 2.09                    | 300                      | ----                      | ----       |                      |                                |
| 9/30/54  | 17.6                    | 15.4                     | 23.4                      | 1.50                    | 1.72                     | 300                       | ----       | ----                 | 9/30/54                        | 32.3        | 40.5                    | 31.7                     | 1.88                      | 3.06                    | 300                      | ----                      | ----       |                      |                                |
| 10/23/54   | 23.1                    | 21.3                     | 25.9                      | 1.77                    | 1.77                     | 177                       | ----       | ----                 | 10/23/54                       | 51.2        | 37.4                    | 33.1                     | 2.98                      | 2.83                    | 179                      | ----                      | ----       |                      |                                |
| 11/15/54   | 37.9                    | 21.6                     | 28.0                      | 2.38                    | 2.02                     | 163                       | 0.58       | ----                 | 11/15/54                       | 67.3        | 46.8                    | 44.3                     | ----                      | ----                    | 134                      | 0.50                      | 1          |                      |                                |
| 12/15/54   | 30.2                    | 24.6                     | 23.9                      | 2.57                    | 2.30                     | 131                       | 0.48       | ----                 | 12/15/54                       | 52.6        | 42.3                    | 40.7                     | 3.06                      | 3.20                    | 140                      | ----                      | 4          |                      |                                |
| 1/23/55  | 27.1                    | 25.4                     | 27.6                      | 2.31                    | 2.39                     | 137                       | 0.36       | 10                   | 1/23/55                        | 40.5        | 35.3                    | 34.3                     | 2.36                      | 2.67                    | 229                      | NT                        | 20         |                      |                                |
| 5/17/55  | 25.3                    | 25.3                     | 30.7                      | 2.41                    | 2.37                     | 167                       | ----       | 10                   | 5/17/55                        | 50.0        | 41.1                    | 39.3                     | 2.91                      | 3.11                    | 177                      | ----                      | 3          |                      |                                |
| Site 22, Cache Co., Utah                                     |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Trenton SIL/SIL (CL)   |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 7/21/54  | 21.0                    | 20.7                     | 27.3                      | 1.73                    | 1.34                     | 300                       | ----       | ----                 | 7/21/54                        | 23.4        | 27.0                    | 25.6                     | 1.36                      | 2.04                    | 300                      | ----                      | ----       |                      |                                |
| 8/4/54   | 13.3                    | 21.3                     | 26.2                      | 1.70                    | 2.04                     | 300                       | ----       | ----                 | 8/4/54                         | 31.9        | 27.7                    | 30.0                     | 1.86                      | 2.09                    | 300                      | ----                      | ----       |                      |                                |
| 9/30/54  | 17.6                    | 15.4                     | 23.4                      | 1.50                    | 1.72                     | 300                       | ----       | ----                 | 9/30/54                        | 32.3        | 40.5                    | 31.7                     | 1.88                      | 3.06                    | 300                      | ----                      | ----       |                      |                                |
| 10/23/54   | 23.1                    | 21.3                     | 25.9                      | 1.77                    | 1.77                     | 177                       | ----       | ----                 | 10/23/54                       | 51.2        | 37.4                    | 33.1                     | 2.98                      | 2.83                    | 179                      | ----                      | ----       |                      |                                |
| 11/15/54   | 37.9                    | 21.6                     | 28.0                      | 2.38                    | 2.02                     | 163                       | 0.58       | ----                 | 11/15/54                       | 67.3        | 46.8                    | 44.3                     | ----                      | ----                    | 134                      | 0.50                      | 1          |                      |                                |
| 12/15/54   | 30.2                    | 24.6                     | 23.9                      | 2.57                    | 2.30                     | 131                       | 0.48       | ----                 | 12/15/54                       | 52.6        | 42.3                    | 40.7                     | 3.06                      | 3.20                    | 140                      | ----                      | 4          |                      |                                |
| 1/23/55  | 27.1                    | 25.4                     | 27.6                      | 2.31                    | 2.39                     | 137                       | 0.36       | 10                   | 1/23/55                        | 40.5        | 35.3                    | 34.3                     | 2.36                      | 2.67                    | 229                      | NT                        | 20         |                      |                                |
| 5/17/55  | 25.3                    | 25.3                     | 30.7                      | 2.41                    | 2.37                     | 167                       | ----       | 10                   | 5/17/55                        | 50.0        | 41.1                    | 39.3                     | 2.91                      | 3.11                    | 177                      | ----                      | 3          |                      |                                |
| Site 23, Cache Co., Utah                                     |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Midvale SIL/SIL (CL)   |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 7/20/54  | 20.1                    | 24.1                     | 24.3                      | 1.62                    | 2.02                     | 226                       | ----       | ----                 | 7/20/54                        | 23.8        | 39.2                    | 41.2                     | 1.64                      | 2.54                    | 300                      | ----                      | ----       |                      |                                |
| 8/3/54   | 20.0                    | 21.8                     | 31.2                      | 1.61                    | 1.53                     | 300                       | ----       | ----                 | 8/3/54                         | 55.3        | 59.4                    | 62.9                     | 2.44                      | 3.85                    | 300                      | ----                      | ----       |                      |                                |
| 9/1/54   | 25.6                    | 27.7                     | 31.2                      | 2.30                    | 2.33                     | 167                       | ----       | ----                 | 9/1/54                         | 35.2        | 54.8                    | 61.8                     | 2.43                      | 3.55                    | 300                      | ----                      | ----       |                      |                                |
| 10/11/54   | 27.3                    | 27.0                     | 29.5                      | 2.15                    | 2.14                     | 137                       | ----       | ----                 | 10/11/54                       | 40.4        | 61.0                    | 64.5                     | 2.79                      | 3.75                    | 142                      | 0.72                      | ----       |                      |                                |
| 11/25/54   | 34.3                    | 33.3                     | 33.5                      | 2.76                    | 2.60                     | 106                       | 0.61       | 3                    | 11/25/54                       | 47.4        | 58.6                    | 66.7                     | 3.27                      | 3.80                    | 127                      | 0.42                      | 12         |                      |                                |
| 5/14/55  | 15.8                    | 17.5                     | 30.3                      | 1.39                    | 2.27                     | 277                       | ----       | ----                 | 5/15/55                        | 44.9        | 55.3                    | 63.9                     | 3.10                      | 3.62                    | 133                      | ----                      | 14         |                      |                                |
| 6/2/55   | 35.1                    | 31.3                     | 31.3                      | 2.32                    | 2.68                     | 162                       | ----       | ----                 | 5/14/55                        | 37.5        | 57.0                    | 65.3                     | 2.73                      | 3.82                    | 127                      | ----                      | 25         |                      |                                |
|  |                         |                          |                           |                         |                          |                           |            |                      | 6/2/55                         | 45.1        | 56.2                    | 64.2                     | 3.11                      | 3.64                    | 171                      | ----                      | 18         |                      |                                |
| Site 24, Cache Co., Utah                                     |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| Salt Lake SIL/SIL (ML)                                       |                         |                          |                           |                         |                          |                           |            |                      |                                |             |                         |                          |                           |                         |                          |                           |            |                      |                                |
| 7/20/54  | 20.1                    | 24.1                     | 24.3                      | 1.62                    | 2.02                     | 226                       | ----       | ----                 | 7/20/54                        | 23.8        | 39.2                    | 41.2                     | 1.64                      | 2.54                    | 300                      | ----                      | ----       |                      |                                |
| 8/3/54   | 20.0                    | 21.8                     | 31.2                      | 1.61                    | 1.53                     | 300                       | ----       | ----                 | 8/3/54                         | 55.3        | 59.4                    | 62.9                     | 2.44                      | 3.85                    |                          |                           |            |                      |                                |



Table B3d (Continued)  
Intermountain Region (Continued)

| Soil Moisture Content                                   |                   |                    |                     |                           |                    |                     |                   |                    |                     | Soil Moisture Content                                  |                  |                          |                      |                   |                    |                     |                   |                    |                     | Soil Moisture Content |  |  |            |                  |                          |  |  |  |  |
|---|-------------------|--------------------|---------------------|---------------------------|--------------------|---------------------|-------------------|--------------------|---------------------|--|------------------|--------------------------|----------------------|-------------------|--------------------|---------------------|-------------------|--------------------|---------------------|-----------------------|--|--|------------|------------------|--------------------------|--|--|--|--|
| Percent Weight Basis                                    |                   |                    |                     |                           | In. 0 in.          |                     |                   |                    |                     | Core Index   | Femol- ing Index | Depth to water Table in. | Percent Weight Basis |                   |                    |                     |                   | In. 0 in.          |                     |                       |  |  | Core Index | Femol- ing Index | Depth to water Table in. |  |  |  |  |
| Sample Date   | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth | 0- to 6-in. Depth         | 6- to 12-in. Depth | 12- to 18-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth |  |                  |                          | Sample Date          | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth |                       |  |  |            |                  |                          |  |  |  |  |
| Site 27, Caribou Co., Idaho<br>Pittsville SIL/SIL (CL)  |                   |                    |                     |                           |                    |                     |                   |                    |                     | Site 30, Caribou Co., Idaho<br>Pittsville SIL/SIL (CL) |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 7/6/54  | 3.0               | 6.3                | 7.7                 | 0.65                      | 0.70               | 300                 | ----              |                    |                     | 7/6/54   | 7.5              | 7.5                      | 2.1                  | 0.54              | 0.61               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 8/2/54  | 6.4               | 7.3                | 7.7                 | 0.46                      | 0.61               | 300                 | ----              |                    |                     | 8/2/54   | 5.3              | 4.5                      | 4.2                  | 0.35              | 0.35               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 9/2/54  | 6.2               | 7.0                | 7.4                 | 0.45                      | 0.52               | 300                 | ----              |                    |                     | 9/2/54   | 5.3              | 7.0                      | 7.2                  | 0.35              | 0.55               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 10/11/54  | 5.0               | 7.1                | 7.3                 | 0.49                      | 0.60               | 300                 | ----              |                    |                     | 10/11/54   | 5.9              | 5.7                      | 7.4                  | 0.42              | 0.45               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 3/25/55   |                   |                    |                     | Frozen                    |                    |                     |                   |                    |                     | 3/25/55  |                  |                          |                      | Frozen            |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 5/12/55   | 15.2              | 16.7               | 12.7                | 1.23                      | 1.34               | 257                 | NT                |                    |                     | 5/12/55  |                  |                          |                      | Frozen            |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 6/2/55  | 25.4              | 22.1               | 20.6                | 1.92                      | 1.52               | 132                 | 0.42              |                    |                     | 6/2/55   | 11.2             | 14.0                     | 14.1                 | 0.56              | 1.10               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Site 31, Caribou Co., Idaho<br>Hyrum CL/CL (CL)         |                   |                    |                     |                           |                    |                     |                   |                    |                     | Site 32, Bannock Co., Idaho<br>Onyx SIL/SIL (ML)       |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 7/6/54  | 6.7               | 10.3               | 11.3                | 0.51                      | 0.93               | 300                 | ----              |                    |                     | 7/7/54   | 9.3              | 6.6                      | 9.4                  | 0.73              | 0.52               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 8/10/54   | 6.6               | 11.4               | 10.2                | 0.51                      | 1.03               | 300                 | ----              |                    |                     | 8/10/54  | 3.7              | 5.3                      | 6.3                  | 0.23              | 0.42               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 9/2/54  | 6.0               | 10.7               | 11.7                | 0.46                      | 0.76               | 300                 | ----              |                    |                     | 9/2/54   | 3.3              | 4.5                      | 4.5                  | 0.26              | 0.36               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 10/11/54  | 5.6               | 5.2                | 7.2                 | 0.43                      | 0.47               | NR                  |                   |                    |                     | 10/12/54   | 4.0              | 4.6                      | 5.2                  | 0.31              | 0.36               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 3/25/55   |                   |                    |                     | Snowbound                 |                    |                     |                   |                    |                     | 3/25/55  | 16.1             | 12.6                     | 10.5                 | 1.26              | 1.00               | 253                 | NT                |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 4/25/55   |                   |                    |                     | Snowbound                 |                    |                     |                   |                    |                     | 4/24/55  | 17.0             | 13.0                     | 11.2                 | 1.33              | 1.03               | 189                 |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 5/13/55   | 15.4              | 12.4               | 12.0                | 1.13                      | 1.75               | 202                 | ----              |                    |                     | 5/13/55  | 7.7              | 3.3                      | 3.7                  | 0.60              | 0.66               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 6/2/55  |                   |                    |                     | Road inaccessible         |                    |                     |                   |                    |                     | 6/2/55   | 18.2             | 10.3                     | 7.3                  | 1.42              | 0.66               | 284                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Plowed before 10/11/54                                  |                   |                    |                     |                           |                    |                     |                   |                    |                     |  |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Site 34, Bannock Co., Idaho<br>Portneuf SIL/SIL (ML)    |                   |                    |                     |                           |                    |                     |                   |                    |                     | Site 35, Bannock Co., Idaho<br>Portneuf SIL/SIL (ML)   |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 7/7/54  | 9.1               | 7.3                | 4.7                 | 0.55                      | 0.64               | 300                 | ----              |                    |                     | 7/7/54   | 14.0             | 7.1                      | 7.0                  | 0.84              | 0.50               | 290                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 8/10/54   | 5.1               | 7.0                | 3.0                 | 0.35                      | 0.56               | 300                 | ----              |                    |                     | 8/10/54  | 4.3              | 7.4                      | 9.1                  | 0.37              | 0.54               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 9/2/54  | 4.5               | 8.9                | 8.5                 | 0.31                      | 0.72               | 300                 | ----              |                    |                     | 9/2/54   | 4.0              | 7.3                      | 7.6                  | 0.31              | 0.72               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 10/12/54  | 5.7               | 8.8                | 9.5                 | 0.39                      | 0.71               | 300                 | ----              |                    |                     | 10/12/54   | 4.1              | 6.9                      | 6.7                  | 0.31              | 0.48               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 3/25/55   | 25.1              | 28.4               | 31.8                | 1.72                      | 2.28               | 166                 | NT                |                    |                     | 3/25/55  | 13.5             | 13.4                     | 10.4                 | 1.04              | 0.95               | 1.5                 |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 4/24/55   | 28.1              | 23.6               | 25.6                | 1.92                      | 1.50               | 171                 | 1.20              |                    |                     | 4/24/55  | 14.4             | 12.2                     | 11.5                 | 1.11              | 0.96               | 1.8                 |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 5/13/55   | 12.5              | 13.5               | 12.5                | 0.86                      | 1.02               | 281                 | ----              |                    |                     | 5/13/55  | 8.6              | 10.7                     | 12.2                 | 0.66              | 0.76               | 1.95                |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 6/3/55  | 22.4              | 11.7               | 3.3                 | 1.53                      | 0.94               | 300                 | ----              |                    |                     | 6/3/55   | 16.2             | 12.3                     | 11.1                 | 1.50              | 0.37               | 210                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Site 36, Bannock Co., Idaho<br>Bannock SIL/SIL (CL-ML)  |                   |                    |                     |                           |                    |                     |                   |                    |                     | Site 37, Bingham Co., Idaho<br>Delco L/SIL (CL-ML)     |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 7/7/54  | 16.2              | 19.8               | 26.4                | 1.53                      | 1.35               | 300                 | ----              |                    |                     | 7/7/54   | 5.9              | 6.8                      | 5.6                  | 0.54              | 0.54               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 5/10/54   | 14.3              | 16.9               | 31.7                | 1.35                      | 1.58               | 300                 | ----              |                    |                     | 8/10/54  | 2.5              | 5.2                      | 5.7                  | 0.21              | 0.41               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 2/3/54  |                   |                    |                     | (Irrigation) site flooded |                    |                     |                   |                    |                     | 9/3/54   | 4.2              | 4.7                      | 3.4                  | 0.36              | 0.37               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 10/12/54  | 22.7              | 23.1               | 32.7                | 2.14                      | 2.16               | 201                 | ----              |                    |                     | 10/12/54   | 2.3              | 4.1                      | 5.8                  | 0.17              | 0.37               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 3/25/55   | 22.9              | 24.7               | 49.0                | 2.16                      | 2.31               | 300                 | ----              |                    |                     | 3/24/55  | 11.0             | 11.4                     | 3.0                  | 0.93              | 0.90               | 285                 |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 4/24/55   | 16.0              | 23.4               | 33.5                | 1.51                      | 2.13               | 218                 | 0.48              |                    |                     | 4/24/55  | 10.8             | 11.0                     | 10.0                 | 0.91              | 0.87               | 300                 | NT                |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 5/13/55   | 15.5              | 21.3               | 22.3                | 1.46                      | 1.99               | 300                 | ----              |                    |                     | 5/13/55  | 6.6              | 3.8                      | 11.2                 | 0.56              | 0.70               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 6/3/55  | 21.3              | 21.4               | 32.7                | 2.00                      | 2.00               | 300+                | ----              |                    |                     | 6/3/55   | 11.3             | 7.7                      | 8.2                  | 0.96              | 0.61               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Irrigated after 7/7/54 and 9/3/54. Plowed after 4/24/55 |                   |                    |                     |                           |                    |                     |                   |                    |                     |  |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Site 38, Bingham Co., Idaho<br>Delco SIL/SIL (CL)       |                   |                    |                     |                           |                    |                     |                   |                    |                     | Site 39, Bingham Co., Idaho<br>Sage Moor SIL/SIL (CL)  |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 7/7/54  | 10.7              | 10.1               | 11.2                | 0.92                      | 0.93               | 300                 | ----              |                    |                     | 7/7/54   | 21.0             | 25.3                     | 25.5                 | 1.86              | 2.28               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 8/10/54   | 8.8               | 8.2                | 3.0                 | 0.76                      | 0.76               | 300                 | ----              |                    |                     | 8/10/54  | 13.0             | 14.6                     | 21.4                 | 1.25              | 1.31               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 9/3/54  | 3.4               | 9.3                | 1.5                 | 0.31                      | 0.31               | 300                 | ----              |                    |                     | 9/3/54   | 19.9             | 21.4                     | 2.0                  | 1.77              | 1.93               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 10/12/54  | 7.6               | 10.3               | 3.3                 | 0.65                      | 1.00               | 300                 | ----              |                    |                     | 10/12/54   | 17.8             | 18.9                     | 25.4                 | 1.58              | 1.70               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 3/24/55   | 19.3              | 13.0               | 15.0                | 1.66                      | 1.76               | 276                 |                   |                    |                     | 3/24/55  | 19.2             | 20.3                     | 27.5                 | 1.70              | 1.83               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 4/24/55   | 17.6              | 15.0               | 12.4                | 1.51                      | 1.39               | 300                 | ----              |                    |                     | 4/24/55  | 20.6             | 21.9                     | 23.2                 | 1.43              | 1.97               | 300                 | NT                |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 5/13/55   | 10.1              | 11.2               | 11.7                | 0.87                      | 1.03               | 300                 | ----              |                    |                     | 5/12/55  | 16.7             | 23.3                     | 23.0                 | 1.48              | 2.10               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 6/3/55  | 23.4              | 21.1               | 21.5                | 2.04                      | 1.95               | 199                 | 0.66              |                    |                     | 6/3/55   | 18.8             | 20.2                     | 23.0                 | 1.67              | 1.82               | 300+                | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Irrigated before 6/3/55                                 |                   |                    |                     |                           |                    |                     |                   |                    |                     |  |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Site 40, Bingham Co., Idaho<br>Sage Moor L/L (ML)       |                   |                    |                     |                           |                    |                     |                   |                    |                     | Site 41, Bingham Co., Idaho<br>Fingal SIL/SIL (SM)     |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 7/7/54  | 10.5              | 10.2               | 9.0                 | 0.96                      | 0.94               | 300                 | ----              |                    |                     | 7/7/54   | 16.3             | 18.5                     | 18.1                 | 1.58              | 1.89               | 169                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 8/10/54   | 14.1              | 15.5               | 20.6                | 1.29                      | 1.42               | 300                 | ----              |                    |                     | 8/10/54  | 15.4             | 17.2                     | 17.2                 | 1.50              | 1.75               | 147                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 9/3/54  | 20.5              | 18.6               | 24.0                | 1.88                      | 1.71               | 280                 | ----              |                    |                     | 9/3/54   | 14.8             | 17.9                     | 17.4                 | 1.44              | 1.83               | 300                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 10/12/54  | 11.5              | 10.4               | 12.1                | 1.06                      | 0.95               | 300                 | ----              |                    |                     | 10/12/54   | 16.5             | 15.1                     | 16.6                 | 1.60              | 1.54               | 178                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 3/24/55   | 25.3              | 20.9               | 21.0                | 2.32                      | 1.92               | 300                 | ----              |                    |                     | 3/24/55  | 20.4             | 23.3                     | 26.6                 | 1.98              | 2.38               | 172                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 4/24/55   | 15.8              | 15.4               | 18.0                | 1.45                      | 1.41               | 300                 | NT                |                    |                     | 4/24/55  | 22.9             | 22.8                     | 23.5                 | 2.23              | 2.33               | 57                  | 0.40              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 5/12/55   | 10.1              | 11.9               | 10.9                | 0.93                      | 1.09               | 300+                | ----              |                    |                     | 5/12/55  | 16.4             | 18.2                     | 19.9                 | 1.59              | 1.86               | 92                  | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 6/3/55  | 14.8              | 14.4               | 19.0                | 1.36                      | 1.32               | 300+                | ----              |                    |                     | 6/3/55   | 17.8             | 18.9                     | 21.5                 | 1.73              | 1.93               | 83                  | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Irrigated before 8/10/54 and 9/3/54                     |                   |                    |                     |                           |                    |                     |                   |                    |                     |  |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Site 42, Bingham Co., Idaho<br>Sage Moor SIL/SIL (CL)   |                   |                    |                     |                           |                    |                     |                   |                    |                     | Site 43, Bingham Co., Idaho<br>Fingal L/L/L (SM)       |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 7/7/54  | 15.0              | 22.9               | 26.6                | 1.18                      | 1.80               | 300                 | ----              |                    |                     | 7/8/54   | 10.9             | 15.8                     | 19.7                 | 0.95              | 1.55               | 220                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 8/10/54   | 16.1              | 21.1               | 21.9                | 1.26                      | 1.66               | 300                 | ----              |                    |                     | 8/10/54  | 11.9             | 16.3                     | 19.5                 | 1.04              | 1.60               | 223                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 9/3/54  | 12.5              | 14.5               | 18.0                | 0.98                      | 1.14               | 300                 | ----              |                    |                     | 9/3/54   | 10.9             | 18.9                     | 21.1                 | 1.46              | 1.86               | 233                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 10/12/54  | 15.3              | 22.3               | 25.5                | 1.20                      | 1.75               | 300                 | ----              |                    |                     | 10/12/54   | 17.8             | 15.7                     | 17.0                 | 1.56              | 1.54               | 170                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 3/24/55   | 33.9              | 29.5               | 29.7                | 2.66                      | 2.32               | 300                 | ----              |                    |                     | 3/24/55  | 16.0             | 20.4                     | 22.6                 | 1.47              | 2.01               | 300                 | 1.12              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 4/24/55   | 25.8              | 29.4               | 32.5                | 2.03                      | 2.31               | 266                 | NT                |                    |                     | 4/24/55  | 11.4             | 14.6                     | 16.9                 | 1.00              | 1.44               | 240                 | 0.78              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 5/12/55   | 14.1              | 26.7               | 26.7                | 1.11                      | 2.10               | 300+                | ----              |                    |                     | 5/12/55  | 13.8             | 16.7                     | 20.5                 | 1.21              | 1.44               | 243                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| 6/3/55  | 19.7              | 18.1               | 22.9                | 1.55                      | 1.42               | 300+                | ----              |                    |                     | 6/3/55   | 11.2             | 15.0                     | 15.2                 | 0.98              | 1.48               | 211                 | ----              |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |
| Irrigated before 8/10/54 and 10/2/54                    |                   |                    |                     |                           |                    |                     |                   |                    |                     |  |                  |                          |                      |                   |                    |                     |                   |                    |                     |                       |  |  |            |                  |                          |  |  |  |  |



Table B3d (Continued)  
Intermountain Region (Continued)

| Soil Moisture Content                                   |                          |                           |                         |                          |                           |                         |                          |                           |                                     | Remold-<br>ing<br>Index            | Depth<br>to<br>Water<br>Table<br>in. | Soil Moisture Content                                    |                           |                         |                          |                           |                         |                          |                           |       |  | Remold-<br>ing<br>Index | Depth<br>to<br>Water<br>Table<br>in. |
|---|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|-------------------------------------|------------------------------------|--------------------------------------|--|---------------------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|-------|--|-------------------------|--------------------------------------|
| Percent Weight Basis                                    |                          |                           |                         |                          |                           | in./in.                 |                          |                           |                                     |                                    |                                      | Percent Weight Basis                                     |                           |                         |                          |                           |                         | in./in.                  |                           |       |  |                         |                                      |
| 0- to<br>6-in.<br>Depth                                 | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth             |                                    |                                      | 6- to<br>12-in.<br>Depth                                 | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth |       |  |                         |                                      |
| Sample<br>Date  | Depth                    | Depth                     | Depth                   | Depth                    | Depth                     | Depth                   | Depth                    | Depth                     | Sample<br>Date                      |                                    |                                      | Depth  | Depth                     | Depth                   | Depth                    | Depth                     | Sample<br>Date          | Depth                    | Depth                     | Depth |  |                         |                                      |
| Site 44, Bingham Co., Idaho<br>Blackfoot L/S/L (CL)     |                          |                           |                         |                          |                           |                         |                          |                           |                                     |                                    |                                      | Site 45, Bingham Co., Idaho<br>Bannock L/S/L (CL)        |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| 7/8/54  | 21.7                     | 19.9                      | 20.6                    | 1.84                     | 1.91                      | 370                     | ----                     |                           | 7/8/54                              | 12.2                               | 14.0                                 | 17.3   | 1.05                      | 1.34                    | 223                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 8/10/54   | 31.1                     | 21.4                      | 24.2                    | 2.53                     | 2.05                      | 300                     | ----                     |                           | 3/10/54                             | 6.8                                | 5.1                                  | 5.9  | 0.52                      | 0.49                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 9/2/54  | 33.6                     | 22.0                      | 22.4                    | 2.64                     | 2.11                      | 275                     | ----                     |                           | 3/2/54                              | 5.6                                | 5.5                                  | 9.9  | 0.57                      | 0.53                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 10/12/54  | 25.6                     | 22.6                      | 29.4                    | 2.17                     | 2.17                      | 254                     | ----                     |                           | 10/12/54                            | 5.3                                | 5.7                                  | 5.4  | 0.54                      | 0.55                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 3/24/55   | Frozen                   |                           |                         |                          |                           |                         |                          |                           | 3/24/55                             | 13.5                               | 11.3                                 | 19.3   | 1.60                      | 1.08                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 4/24/55   | 18.9                     | 16.6                      | 16.4                    | 1.60                     | 1.59                      | 300                     | 0.94                     | 34                        | 4/24/55                             | 19.5                               | 16.0                                 | 17.5   | 1.68                      | 1.54                    | 300                      | NT                        |                         |                          |                           |       |  |                         |                                      |
| 5/12/55   | 13.1                     | 14.6                      | 13.3                    | 1.57                     | 1.40                      | 300                     | NT                       | DRY                       | 5/12/55                             | 8.6                                | 10.7                                 | 15.8   | 0.74                      | 1.03                    | 300+                     | ----                      |                         |                          |                           |       |  |                         |                                      |
| 6/3/55  | 15.7                     | 19.6                      | 17.2                    | 1.41                     | 1.88                      | 254                     | ----                     | 13                        | 6/3/55                              | 21.1                               | 19.2                                 | 19.8   | 1.32                      | 1.34                    | 171                      | 0.44                      |                         |                          |                           |       |  |                         |                                      |
| Irrigated before 9/10/54, 9/2/54, 10/12/54, and 6/3/55  |                          |                           |                         |                          |                           |                         |                          |                           |                                     | Irrigated before 6/3/55            |                                      |  |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| Site 46, Bingham Co., Idaho<br>Beverly L/S/L (CL)       |                          |                           |                         |                          |                           |                         |                          |                           |                                     |                                    |                                      | Site 47, Bonneville Co., Idaho<br>Bannock SL/SIL (CL-ML) |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| 7/8/54  | 11.2                     | 12.7                      | 15.2                    | 0.95                     | 1.22                      | 300                     | ----                     |                           | 7/8/54                              | 21.3                               | 19.8                                 | 21.8   | 1.97                      | 2.00                    | 191                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 8/10/54   | 16.8                     | 17.4                      | 16.8                    | 1.43                     | 1.48                      | 300                     | ----                     |                           | 8/11/54                             | 17.0                               | 18.5                                 | 20.9   | 1.57                      | 1.36                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 9/2/54  | 16.9                     | 15.3                      | 13.5                    | 1.44                     | 1.52                      | 300                     | ----                     |                           | 9/8/54                              | 20.0                               | 21.1                                 | 23.1   | 1.35                      | 1.13                    | 193                      | 1.73                      |                         |                          |                           |       |  |                         |                                      |
| 10/12/54  | 17.3                     | 14.1                      | 15.1                    | 1.47                     | 1.35                      | 289                     | ----                     |                           | 10/13/54                            | 13.1                               | 11.3                                 | 12.1   | 1.21                      | 1.14                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 3/24/55   | 27.4                     | 16.3                      | 14.8                    | 2.33                     | 1.56                      | 300                     | NT                       |                           | 3/24/55                             | 20.9                               | 17.1                                 | 13.4   | 1.93                      | 1.72                    | ---                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 4/24/55   | 24.9                     | 16.6                      | 17.7                    | 2.12                     | 1.59                      | 274                     | NT                       |                           | 4/23/55                             | 16.0                               | 15.1                                 | 15.0   | 1.43                      | 1.52                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 5/12/55   | 11.7                     | 12.4                      | 15.1                    | 1.00                     | 1.19                      | 291                     |                          |                           | 5/12/55                             | 11.9                               | 12.8                                 | 12.7   | 1.10                      | 1.29                    | 300+                     | NT                        |                         |                          |                           |       |  |                         |                                      |
| 6/3/55  | 27.1                     | 19.3                      | 18.6                    | 2.31                     | 1.35                      | 230                     | 0.73                     |                           | 6/3/55                              | 20.8                               | 15.2                                 | 8.3  | 1.92                      | 1.53                    | 280                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| Irrigated before 9/10/54, 9/2/54, 10/12/54, and 6/3/55  |                          |                           |                         |                          |                           |                         |                          |                           |                                     | Irrigated before 7/8/54 and 6/3/55 |                                      |  |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| Site 48, Bonneville Co., Idaho<br>Paul Sil/SIL (CL)     |                          |                           |                         |                          |                           |                         |                          |                           |                                     |                                    |                                      | Site 49, Bonneville Co., Idaho<br>Bannock SL/SIL (CL)    |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| 7/8/54  | 6.0                      | 8.9                       | 8.0                     | 0.49                     | 0.74                      | 300                     | ----                     |                           | 7/8/54                              | 11.7                               | 11.3                                 | 13.1   | 1.03                      | 1.06                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 8/11/54   | 6.9                      | 9.4                       | 9.2                     | 0.56                     | 0.78                      | 300                     | ----                     |                           | 8/11/54                             | 19.3                               | 18.5                                 | 19.6   | 1.70                      | 1.73                    | 173                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 9/8/54  | 7.8                      | 9.8                       | 8.5                     | 0.54                     | 0.81                      | 300                     | ----                     |                           | 9/8/54                              | 15.4                               | 20.2                                 | 22.6   | 1.45                      | 1.69                    | 185                      | 1.13                      |                         |                          |                           |       |  |                         |                                      |
| 10/13/54  | 10.0                     | 8.4                       | 9.4                     | 0.82                     | 0.70                      | 300                     | ----                     |                           | 10/13/54                            | 10.4                               | 11.9                                 | 13.0   | 0.92                      | 1.11                    | 254                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 3/24/55   | 17.9                     | 14.1                      | 9.2                     | 1.46                     | 1.17                      | ---                     | ----                     |                           | 4/23/55                             | 14.8                               | 13.8                                 | 15.9   | 1.31                      | 1.39                    | 300                      | NT                        |                         |                          |                           |       |  |                         |                                      |
| 4/23/55   | 16.8                     | 18.3                      | 16.7                    | 1.37                     | 1.52                      | 246                     | NT                       |                           | 5/12/55                             | 8.5                                | 10.1                                 | 12.1   | 0.75                      | 0.95                    | 300+                     | ----                      |                         |                          |                           |       |  |                         |                                      |
| 5/12/55   | 14.5                     | 15.1                      | 12.6                    | 1.13                     | 1.25                      | 300                     | ----                     |                           | 6/3/55                              | 22.2                               | 18.3                                 | 19.9   | 1.96                      | 1.71                    | 201                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 6/3/55  | 24.0                     | 19.7                      | 12.5                    | 1.96                     | 1.63                      | 239                     | 0.70†                    |                           | Irrigated before 8/11/54 and 9/8/54 |                                    |                                      |  |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| Site 50, Bonneville Co., Idaho<br>Fortneuf Sil/SIL (CL) |                          |                           |                         |                          |                           |                         |                          |                           |                                     |                                    |                                      | Site 51, Bonneville Co., Idaho<br>Fortneuf Sil/SIL (CL)  |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| 7/8/54  | 4.4                      | 5.2                       | 6.6                     | 0.39                     | 0.46                      | 300                     | ----                     |                           | 7/8/54                              | 2.4                                | 7.6                                  | 6.8  | 0.21                      | 0.60                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 8/11/54   | 3.7                      | 3.9                       | 4.5                     | 0.33                     | 0.34                      | 300                     | ----                     |                           | 8/11/54                             | 3.2                                | 5.3                                  | 5.8  | 0.27                      | 0.42                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 9/8/54  | 3.5                      | 7.0                       | 4.9                     | 0.31                     | 0.62                      | 300                     | ----                     |                           | 9/8/54                              | 4.2                                | 6.5                                  | 6.3  | 0.36                      | 0.51                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 10/13/54  | 6.1                      | 4.5                       | 4.4                     | 0.54                     | 0.40                      | 300                     | ----                     |                           | 10/13/54                            | 3.9                                | 4.6                                  | 6.2  | 0.33                      | 0.36                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 4/23/55   | 15.5                     | 13.4                      | 11.4                    | 1.38                     | 1.13                      | 300                     | NT                       |                           | 3/24/55                             | 29.1                               | 14.9                                 | 8.3  | 2.50                      | 1.18                    | ---                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 5/12/55   | 5.8                      | 9.5                       | 11.7                    | 0.52                     | 0.84                      | 300+                    | ----                     |                           | 4/23/55                             | 13.0                               | 13.5                                 | 12.0   | 1.12                      | 1.07                    | 300+                     | NT                        |                         |                          |                           |       |  |                         |                                      |
| 6/3/55  | 18.0                     | 10.9                      | 7.9                     | 1.60                     | 0.96                      | 300+                    | ----                     |                           | 5/12/55                             | 7.2                                | 11.5                                 | 12.3   | 0.62                      | 0.91                    | 300                      | NT                        |                         |                          |                           |       |  |                         |                                      |
|   |                          |                           |                         |                          |                           |                         |                          |                           | 6/3/55                              | 17.6                               | 15.0                                 | 9.0  | 1.51                      | 1.19                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| Site 52, Bingham Co., Idaho<br>Fortneuf Sil/SIL (CL)    |                          |                           |                         |                          |                           |                         |                          |                           |                                     |                                    |                                      | Site 53, Bingham Co., Idaho<br>Fortneuf L/SIL (CL)       |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| 7/8/54  | 7.4                      | 10.7                      | 8.7                     | 0.59                     | 0.89                      | 300                     | ----                     |                           | 7/8/54                              | 9.1                                | 8.8                                  | 10.0   | 0.75                      | 0.72                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 8/11/54   | 4.6                      | 7.4                       | 6.6                     | 0.36                     | 0.61                      | 300                     | ----                     |                           | 8/11/54                             | 4.1                                | 7.8                                  | 7.3  | 0.34                      | 0.64                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 9/8/54  | 1.9                      | 7.5                       | 8.2                     | 0.35                     | 0.62                      | 300                     | ----                     |                           | 9/8/54                              | 3.3                                | 7.0                                  | 6.8  | 0.27                      | 0.57                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 10/13/54  | 6.9                      | 6.5                       | 6.2                     | 0.55                     | 0.57                      | 300                     | ----                     |                           | 10/13/54                            | 4.6                                | 7.1                                  | 7.5  | 0.38                      | 0.58                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 3/23/55   | 26.0                     | 14.3                      | 11.8                    | 2.11                     | 1.18                      | ---                     | ----                     |                           | 4/23/55                             | 9.3                                | 14.6                                 | 13.1   | 0.77                      | 1.20                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 4/23/55   | 12.7                     | 15.2                      | 14.2                    | 1.01                     | 1.26                      | 300+                    | NT                       |                           | 5/12/55                             | 10.4                               | 12.7                                 | 11.8   | 0.86                      | 1.04                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 5/12/55   | 12.1                     | 14.2                      | 14.4                    | 0.96                     | 1.18                      | 300                     | ----                     |                           | 6/3/55                              | 10.2                               | 9.5                                  | 9.4  | 0.84                      | 0.78                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 6/3/55  | 12.0                     | 12.4                      | 12.1                    | 0.45                     | 1.03                      | 300                     | ----                     |                           |                                     |                                    |                                      |  |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| Site 54, Butte Co., Idaho<br>Unclassified Sil/SIL (CL)  |                          |                           |                         |                          |                           |                         |                          |                           |                                     |                                    |                                      | Site 55, Butte Co., Idaho<br>Unclassified Sil/SIL (CL)   |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| 7/9/54  | 8.1                      | 5.2                       | 6.7                     | 0.51                     | 0.47                      | 300                     | ----                     |                           | 7/9/54                              | 28.0                               | 26.9                                 | 25.6   | 2.37                      | 2.19                    | 193                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 8/11/54   | .9                       | 7.2                       | 9.7                     | 0.29                     | 0.62                      | 300                     | ----                     |                           | 8/11/54                             | 15.6                               | 18.2                                 | 21.2   | 1.28                      | 1.54                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 9/9/54  | 3.4                      | 6.5                       | 7.8                     | 0.26                     | 0.49                      | 300                     | ----                     |                           | 9/9/54                              | 7.3                                | 28.4                                 | 28.1   | 2.65                      | 2.10                    | 171                      | 2.00                      |                         |                          |                           |       |  |                         |                                      |
| 10/14/54  | 3.7                      | 6.3                       | 7.2                     | 0.36                     | 0.44                      | 70                      | ----                     |                           | 10/14/54                            | 22.5                               | 21.9                                 | 22.8   | 1.85                      | 1.85                    | 277                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 4/23/55   | 12.3                     | 11.4                      | 11.1                    | 0.94                     | 0.94                      | 246                     | ----                     |                           | 4/23/55                             | 23.1                               | 22.5                                 | 21.3   | 1.90                      | 1.90                    | 212                      | NT                        |                         |                          |                           |       |  |                         |                                      |
| 5/12/55   | 9.5                      | 10.3                      | 10.4                    | 0.72                     | 0.87                      | 300                     | NT                       |                           | 5/12/55                             | 17.7                               | 18.9                                 | 20.0   | 1.45                      | 1.60                    | 300                      | NT                        |                         |                          |                           |       |  |                         |                                      |
| 6/4/55  | 7.4                      | 7.8                       | 9.0                     | 0.56                     | 0.59                      | 300                     | ----                     |                           | 6/4/55                              | 22.5                               | 23.2                                 | 23.8   | 1.85                      | 1.96                    | 275                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| Site 56, Butte Co., Idaho<br>Unclassified Sil/SIL (CL)  |                          |                           |                         |                          |                           |                         |                          |                           |                                     |                                    |                                      | Site 57, Butte Co., Idaho<br>Unclassified L/SIL (SC)     |                           |                         |                          |                           |                         |                          |                           |       |  |                         |                                      |
| 7/9/54  | 20.0                     | 19.8                      | 21.6                    | 1.46                     | 1.52                      | 300                     | ----                     |                           | 7/9/54                              | 5.5                                | 8.1                                  | 7.8  | 0.52                      | 0.77                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 8/11/54   | 19.5                     | 19.7                      | 21.6                    | 1.41                     | 1.51                      | 300                     | ----                     |                           | 8/11/54                             | 2.8                                | 5.8                                  | 5.8  | 0.27                      | 0.55                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 9/9/54  | 17.5                     | 20.7                      | 23.5                    | 1.28                     | 1.59                      | 283                     | ----                     |                           | 9/9/54                              | 3.8                                | 5.0                                  | 6.6  | 0.35                      | 0.48                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 10/14/54  | 17.6                     | 28.7                      | 30.2                    | 2.29                     | 2.20                      | 209                     | ----                     |                           | 10/14/54                            | 3.7                                | 5.1                                  | 7.3  | 0.35                      | 0.49                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |
| 4/23/55   | 33.1                     | 30.3                      | 32.0                    | 2.42                     | 2.50                      | 134                     | 0.77                     |                           | 4/23/55                             | 9.1                                | 11.2                                 | 9.4  | 0.87                      | 1.07                    | 300                      | NT                        |                         |                          |                           |       |  |                         |                                      |
| 5/12/55   | 28.1                     | 27.6                      | 29.1                    | 2.08                     | 2.12                      | 167                     | 0.75                     |                           | 5/12/55                             | 8.6                                | 11.9                                 | 9.2  | 0.82                      | 1.14                    | 300                      | NT                        |                         |                          |                           |       |  |                         |                                      |
|   |                          |                           |                         |                          |                           |                         |                          |                           | 6/4/55                              | 7.3                                | 10.1                                 | 8.3  | 0.70                      | 0.95                    | 300                      | ----                      |                         |                          |                           |       |  |                         |                                      |

(Continued)

Note: NT = no test.  
† Measurement of 0- to 6-in. layer.



Table 134 (Continued)  
Intermountain Region (Continued)

| Sample Date   | Soil Moisture Content   |                          |                           |                           |                           | Cone Index | Remold-<br>ing Index | Depth to<br>Water<br>in. | Samp.<br>Date | Soil Moisture Content   |                          |                           |                           |                           | Cone Index | Remold-<br>ing Index | Depth to<br>Water<br>in. |  |  |  |  |
|---|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|------------|----------------------|--------------------------|---------------|-------------------------|--------------------------|---------------------------|---------------------------|---------------------------|------------|----------------------|--------------------------|--|--|--|--|
|   | Percent Weight Basis    |                          |                           |                           |                           |            |                      |                          |               | Percent Weight Basis    |                          |                           |                           |                           |            |                      |                          |  |  |  |  |
|   | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 18- to<br>24-in.<br>Depth | 24- to<br>30-in.<br>Depth |            |                      |                          |               | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 18- to<br>24-in.<br>Depth | 24- to<br>30-in.<br>Depth |            |                      |                          |  |  |  |  |
| Site 58, Blaine Co., Idaho<br>Unclassified L/L (ML)     |                         |                          |                           |                           |                           |            |                      |                          |               |                         |                          |                           |                           |                           |            |                      |                          |  |  |  |  |
| 7/9/54  | 12.1                    | 11.8                     | 20.0                      | 0.81                      | 0.80                      | 300        | ----                 |                          | 7/9/54        | 9.5                     | 9.9                      | 13.2                      | 0.81                      | 0.94                      | 300        | ----                 |                          |  |  |  |  |
| 8/12/54   | 10.7                    | 8.3                      | 14.7                      | 0.71                      | 0.56                      | 300        | ----                 |                          | 8/12/54       | 8.1                     | 10.2                     | 10.5                      | 0.69                      | 0.97                      | 300        | ----                 |                          |  |  |  |  |
| 9/9/54  | 9.7                     | 8.2                      | 18.0                      | 0.65                      | 0.56                      | 300        | ----                 |                          | 9/9/54        | 5.2                     | 9.2                      | 9.2                       | 0.44                      | 0.87                      | 300        | ----                 |                          |  |  |  |  |
| 10/14/54  | 13.2                    | 16.5                     | 20.2                      | 0.88                      | 1.12                      | 217        | NT                   |                          | 10/14/54      | 5.3                     | 7.9                      | 9.7                       | 0.45                      | 0.75                      | 300        | ----                 |                          |  |  |  |  |
| 5/11/55   | 21.7                    | 23.1                     | 25.9                      | 1.45                      | 1.57                      | 175        | NT                   |                          | 5/11/55       | 20.7                    | 20.2                     | 20.0                      | 1.76                      | 1.91                      | 248        | NT                   |                          |  |  |  |  |
| 6/4/55  | 19.4                    | 20.9                     | 22.9                      | 1.29                      | 1.42                      | 221        | ----                 |                          | 6/4/55        | 14.5                    | 11.5                     | 17.5                      | 1.24                      | 1.66                      | 327        | ----                 |                          |  |  |  |  |
| Site 60, Blaine Co., Idaho<br>Unclassified SIL/SIL (MH) |                         |                          |                           |                           |                           |            |                      |                          |               |                         |                          |                           |                           |                           |            |                      |                          |  |  |  |  |
| 7/9/54  | 31.0                    | 53.1                     | 69.4                      | 1.93                      | 2.61                      | 173        | ----                 |                          | 7/11/54       | 11.7                    | 11.9                     | 7.1                       | 0.72                      | 1.23                      | 300        | ----                 |                          |  |  |  |  |
| 8/12/54   | 20.0                    | 39.5                     | 54.9                      | 1.10                      | 1.94                      | 163        | ----                 |                          | 8/12/54       | 10.4                    | 5.6                      | 14.6                      | 0.97                      | 0.39                      | 300        | ----                 |                          |  |  |  |  |
| 9/9/54  | 14.9                    | 10.7                     | 47.6                      | 0.82                      | 0.53                      | 188        | ----                 |                          | 9/14/54       | 4.1                     | 5.9                      | 6.5                       | 0.38                      | 0.61                      | 300        | ----                 |                          |  |  |  |  |
| 10/14/54  | 20.7                    | 29.2                     | 69.5                      | 1.14                      | 1.44                      | 172        | ----                 |                          | 10/14/54      | 13.0                    | 5.8                      | 6.3                       | 1.22                      | 0.70                      | 300        | ----                 |                          |  |  |  |  |
| 5/12/55   | 63.2                    | 64.9                     | 80.8                      | 3.49                      | 3.19                      | 116        | 0.44                 | 1.0                      | 3/22/55       | 16.6                    | 15.8                     | 14.7                      | 1.55                      | 1.63                      | 300        | 0.45                 |                          |  |  |  |  |
| 6/4/55  | 57.3                    | 61.5                     | 74.4                      | 3.16                      | 3.03                      | 114        | 0.47                 |                          | 4/21/55       | 16.2                    | 16.9                     | 18.6                      | 1.52                      | 1.74                      | 300        | NT                   |                          |  |  |  |  |
| Site 62, Gooding Co., Idaho<br>Gooding L/S/S (SL)       |                         |                          |                           |                           |                           |            |                      |                          |               |                         |                          |                           |                           |                           |            |                      |                          |  |  |  |  |
| 7/11/54   | 1.6                     | 2.1                      | 3.3                       | 0.15                      | 0.19                      | 300        | ----                 |                          | 7/11/54       | 6.3                     | 6.8                      | 8.6                       | 0.48                      | 0.59                      | 300        | ----                 |                          |  |  |  |  |
| 8/12/54   | 0.7                     | 2.4                      | 4.1                       | 0.06                      | 0.22                      | 300        | ----                 |                          | 8/12/54       | 4.6                     | 4.9                      | 8.7                       | 0.35                      | 0.43                      | 300        | ----                 |                          |  |  |  |  |
| 9/14/54   | 3.4                     | 1.8                      | 2.7                       | 0.31                      | 0.16                      | 300        | ----                 |                          | 9/14/54       | 6.7                     | 9.2                      | 11.2                      | 0.51                      | 0.80                      | 300        | ----                 |                          |  |  |  |  |
| 10/14/54  | 5.7                     | 1.7                      | 3.0                       | 0.52                      | 0.16                      | 300        | ----                 |                          | 10/14/54      | 9.5                     | 8.6                      | 5.9                       | 0.72                      | 0.75                      | 300        | ----                 |                          |  |  |  |  |
| 3/22/55   | 8.5                     | 7.7                      | 7.8                       | 0.78                      | 0.70                      | 245        | 1.10*                |                          | 3/22/55       | 14.6                    | 13.9                     | 15.2                      | 1.11                      | 1.21                      | 300        | NT                   |                          |  |  |  |  |
| 4/21/55   | 5.0                     | 5.4                      | 5.0                       | 0.46                      | 0.49                      | 256        | 1.15*                |                          | 4/21/55       | 16.1                    | 14.3                     | 12.7                      | 1.23                      | 1.24                      | 280        | ----                 |                          |  |  |  |  |
| 5/10/55   | 3.8                     | 3.8                      | 3.1                       | 0.35                      | 0.35                      | 300        | ----                 |                          | 5/10/55       | 9.6                     | 9.7                      | 12.7                      | 0.73                      | 0.84                      | 300        | ----                 |                          |  |  |  |  |
| 6/5/55  | 2.6                     | 3.6                      | 4.3                       | 0.24                      | 0.33                      | 300        | ----                 |                          | 6/5/55        | 6.2                     | 6.6                      | 12.1                      | 0.47                      | 0.57                      | 300        | ----                 |                          |  |  |  |  |
| Site 64, Gooding Co., Idaho<br>Portneuf L/SIL (ML)      |                         |                          |                           |                           |                           |            |                      |                          |               |                         |                          |                           |                           |                           |            |                      |                          |  |  |  |  |
| 7/11/54   | 6.1                     | 5.6                      | 6.2                       | 0.52                      | 0.46                      | 300        | ----                 |                          | 7/11/54       | 7.5                     | 10.1                     | 16.5                      | 0.66                      | 0.87                      | 300        | ----                 |                          |  |  |  |  |
| 8/12/54   | 4.3                     | 2.2                      | 5.5                       | 0.37                      | 0.18                      | 300        | ----                 |                          | 8/12/54       | 5.6                     | 11.8                     | 12.5                      | 0.49                      | 1.02                      | 300        | ----                 |                          |  |  |  |  |
| 9/10/54   | 2.0                     | 4.4                      | 6.3                       | 0.17                      | 0.36                      | 300        | ----                 |                          | 9/10/54       | 8.2                     | 12.4                     | 19.5                      | 0.72                      | 1.07                      | 300        | ----                 |                          |  |  |  |  |
| 10/14/54  | 10.5                    | 5.1                      | 4.6                       | 0.89                      | 0.42                      | 300        | ----                 |                          | 10/14/54      | 12.2                    | 7.3                      | 14.1                      | 1.08                      | 0.63                      | 300        | ----                 |                          |  |  |  |  |
| 3/22/55   | 7.8                     | 11.5                     | 8.3                       | 0.66                      | 0.95                      | 162        | NT                   |                          | 3/22/55       | 14.5                    | 14.6                     | 17.9                      | 1.28                      | 1.26                      | 246        | NT                   |                          |  |  |  |  |
| 4/21/55   | 10.3                    | 8.8                      | 10.8                      | 0.88                      | 0.73                      | 204        | NT                   |                          | 4/21/55       | 12.3                    | 12.6                     | 18.4                      | 1.08                      | 1.08                      | 300        | NT                   |                          |  |  |  |  |
| 5/10/55   | 7.8                     | 8.8                      | 9.2                       | 0.66                      | 0.73                      | 300        | ----                 |                          | 5/10/55       | 9.5                     | 13.6                     | 16.1                      | 0.84                      | 1.18                      | 300+       | ----                 |                          |  |  |  |  |
| 6/5/55  | 4.5                     | 6.2                      | 6.8                       | 0.38                      | 0.51                      | 300+       | ----                 |                          | 6/5/55        | 6.5                     | 7.8                      | 13.5                      | 0.57                      | 0.67                      | 300+       | ----                 |                          |  |  |  |  |
| Site 66, Gooding Co., Idaho<br>Portneuf SIL/SIL (CL)    |                         |                          |                           |                           |                           |            |                      |                          |               |                         |                          |                           |                           |                           |            |                      |                          |  |  |  |  |
| 7/11/54   | 1.8                     | 6.8                      | 9.4                       | 0.15                      | 0.56                      | 300        | ----                 |                          | 7/11/54       | 11.6                    | 13.6                     | 12.8                      | 0.95                      | 1.04                      | 300        | ----                 |                          |  |  |  |  |
| 8/12/54   | 7.6                     | 8.2                      | 9.6                       | 0.21                      | 0.68                      | 300        | ----                 |                          | 8/12/54       | 5.9                     | 14.2                     | 11.5                      | 0.48                      | 1.09                      | 300        | ----                 |                          |  |  |  |  |
| 9/10/54   | 2.7                     | 6.5                      | 8.8                       | 0.22                      | 0.70                      | 300        | ----                 |                          | 9/10/54       | 6.5                     | 13.0                     | 11.4                      | 0.53                      | 1.00                      | 300        | ----                 |                          |  |  |  |  |
| 10/14/54  | 7.2                     | 8.3                      | 7.5                       | 0.55                      | 0.69                      | 300        | ----                 |                          | 10/14/54      | 9.4                     | 11.6                     | 13.9                      | 0.77                      | 1.12                      | 300        | ----                 |                          |  |  |  |  |
| 3/22/55   | 11.2                    | 11.6                     | 9.4                       | 0.92                      | 0.96                      | 279        | ----                 |                          | 3/22/55       | 17.2                    | 17.7                     | 15.2                      | 1.40                      | 1.36                      | 278        | 0.67                 |                          |  |  |  |  |
| 4/21/55   | 10.3                    | 13.1                     | 8.7                       | 0.85                      | 1.08                      | 276        | NT                   |                          | 4/21/55       | 20.6                    | 22.3                     | 14.9                      | 1.68                      | 1.71                      | 263        | NT                   |                          |  |  |  |  |
| 5/10/55   | 7.1                     | 12.6                     | 11.5                      | 0.58                      | 1.04                      | 300        | ----                 |                          | 5/10/55       | 12.8                    | 15.5                     | 13.7                      | 1.04                      | 1.09                      | 281        | ----                 |                          |  |  |  |  |
| 6/5/55  | 3.3                     | 11.9                     | 10.7                      | 0.27                      | 0.99                      | 300        | ----                 |                          | 6/5/55        | 4.9                     | 16.0                     | 12.6                      | 0.40                      | 1.22                      | 300        | ----                 |                          |  |  |  |  |
| Site 68, Elmore Co., Idaho<br>Power SIL/SIL (CL)        |                         |                          |                           |                           |                           |            |                      |                          |               |                         |                          |                           |                           |                           |            |                      |                          |  |  |  |  |
| 7/11/54   | 5.4                     | 17.3                     | 17.4                      | 0.29                      | 1.37                      | 300        | ----                 |                          | 7/11/54       | 9.2                     | 11.6                     | 16.2                      | 3.79                      | 0.97                      | 300        | ----                 |                          |  |  |  |  |
| 8/12/54   | 2.9                     | 9.2                      | 10.6                      | 0.24                      | 0.73                      | 300        | ----                 |                          | 8/12/54       | 7.1                     | 11.6                     | 11.5                      | 0.61                      | 0.97                      | 300        | ----                 |                          |  |  |  |  |
| 9/10/54   | 6.4                     | 9.7                      | 12.6                      | 0.54                      | 0.77                      | 300        | ----                 |                          | 9/10/54       | 3.4                     | 7.3                      | 11.9                      | 0.29                      | 0.61                      | 300        | ----                 |                          |  |  |  |  |
| 10/14/54  | 8.1                     | 12.3                     | 13.7                      | 0.68                      | 0.97                      | 300        | ----                 |                          | 10/14/54      | 8.5                     | 7.7                      | 6.7                       | 0.73                      | 0.65                      | 300        | ----                 |                          |  |  |  |  |
| 3/22/55   | 17.6                    | 17.5                     | 23.8                      | 1.48                      | 1.39                      | 300        | NT                   |                          | 3/22/55       | 19.0                    | 15.4                     | 11.8                      | 1.63                      | 1.29                      | 300        | NT                   |                          |  |  |  |  |
| 4/21/55   | 19.5                    | 20.4                     | 22.6                      | 1.64                      | 1.62                      | 300        | NT                   |                          | 4/21/55       | 21.6                    | 19.4                     | 16.4                      | 1.85                      | 1.63                      | 300        | NT                   |                          |  |  |  |  |
| 5/10/55   | 10.4                    | 15.5                     | 20.1                      | 0.97                      | 1.22                      | 300        | ----                 |                          | 5/10/55       | 13.9                    | 13.7                     | 14.0                      | 1.19                      | 1.15                      | 300        | ----                 |                          |  |  |  |  |
| 6/5/55  | 5.4                     | 9.5                      | 17.0                      | 0.45                      | 0.75                      | 300        | ----                 |                          | 6/5/55        | 6.9                     | 9.5                      | 10.6                      | 0.59                      | 0.80                      | 300        | ----                 |                          |  |  |  |  |
| Site 69, Elmore Co., Idaho<br>Unclassified L/L (CL-ML)  |                         |                          |                           |                           |                           |            |                      |                          |               |                         |                          |                           |                           |                           |            |                      |                          |  |  |  |  |
| 7/11/54   | 5.4                     | 17.3                     | 17.4                      | 0.29                      | 1.37                      | 300        | ----                 |                          | 7/11/54       | 9.2                     | 11.6                     | 16.2                      | 3.79                      | 0.97                      | 300        | ----                 |                          |  |  |  |  |
| 8/12/54   | 2.9                     | 9.2                      | 10.6                      | 0.24                      | 0.73                      | 300        | ----                 |                          | 8/12/54       | 7.1                     | 11.6                     | 11.5                      | 0.61                      | 0.97                      | 300        | ----                 |                          |  |  |  |  |
| 9/10/54   | 6.4                     | 9.7                      | 12.6                      | 0.54                      | 0.77                      | 300        | ----                 |                          | 9/10/54       | 3.4                     | 7.3                      | 11.9                      | 0.29                      | 0.61                      | 300        | ----                 |                          |  |  |  |  |
| 10/14/54  | 8.1                     | 12.3                     | 13.7                      | 0.68                      | 0.97                      | 300        | ----                 |                          | 10/14/54      | 8.5                     | 7.7                      | 6.7                       | 0.73                      | 0.65                      | 300        | ----                 |                          |  |  |  |  |
| 3/22/55   | 17.6                    | 17.5                     | 23.8                      | 1.48                      | 1.39                      | 300        | NT                   |                          | 3/22/55       | 19.0                    | 15.4                     | 11.8                      | 1.63                      | 1.29                      | 300        | NT                   |                          |  |  |  |  |
| 4/21/55   | 19.5                    | 20.4                     | 22.6                      | 1.64                      | 1.62                      | 300        | NT                   |                          | 4/21/55       | 21.6                    | 19.4                     | 16.4                      | 1.85                      | 1.63                      | 300        | NT                   |                          |  |  |  |  |
| 5/10/55   | 10.4                    | 15.5                     | 20.1                      | 0.97                      | 1.22                      | 300        | ----                 |                          | 5/10/55       | 13.9                    | 13.7                     | 14.0                      | 1.19                      | 1.15                      | 300        | ----                 |                          |  |  |  |  |
| 6/5/55  | 5.4                     | 9.5                      | 17.0                      | 0.45                      | 0.75                      | 300        | ----                 |                          | 6/5/55        | 6.9                     | 9.5                      | 10.6                      | 0.59                      | 0.80                      | 300        | ----                 |                          |  |  |  |  |
| Site 70, Boise Co., Idaho<br>Kilmerque SIL/SIL (ML)     |                         |                          |                           |                           |                           |            |                      |                          |               |                         |                          |                           |                           |                           |            |                      |                          |  |  |  |  |
| 7/12/54   | 6.9                     | 6.9                      | 6.9                       | 0.67                      | 0.74                      | 300        | ----                 |                          | 7/12/54       | 3.0                     | 5.4                      | 5.2                       | 0.29                      | 0.54                      | 300        | ----                 |                          |  |  |  |  |
| 8/13/54   | 3.9                     | 6.3                      | 6.0                       | 0.38                      | 0.68                      | 300        | ----                 |                          | 8/13/54       | 1.5                     | 1.8                      | 3.1                       | 0.15                      | 0.28                      | 300        | ----                 |                          |  |  |  |  |
| 9/13/54   | 3.1                     | 6.5                      | 5.5                       | 0.30                      | 0.70                      | 300        | ----                 |                          | 9/13/54       | 2.1                     | 3.4                      | 3.4                       | 0.20                      | 0.34                      | 300        | ----                 |                          |  |  |  |  |
| 10/15/54  | 7.6                     | 6.3                      | 6.4                       | 0.73                      | 0.68                      | 300        | ----                 |                          | 10/15/54      | 4.3                     | 2.8                      | 3.2                       | 0.42                      | 0.28                      | 300        | ----                 |                          |  |  |  |  |
| 4/22/55   | 23.5                    | 29.8                     | 18.3                      | 2.27                      | 2.13                      | 174        | 0.30                 |                          | 4/22/55       | 15.7                    | 14.1                     | 13.4                      | 1.53                      | 1.40                      | 95         | NT                   |                          |  |  |  |  |
| 5/11/55   | 14.9                    | 13.9                     | 13.4                      | 1.44                      | 1.49                      | 300        | NT                   |                          | 5/11/55       | 11.1                    | 10.1                     | 9.1                       | 1.08                      | 1.01                      | 161        | NT                   |                          |  |  |  |  |
| 6/5/55  | 14.7                    | 17.2                     | 11.2                      | 1.42                      | 1.42                      | 300        | ----                 |                          | 6/5/55        | 8.0                     | 7.2                      | 7.8                       | 0.78                      | 0.72                      | 300        | ----                 |                          |  |  |  |  |



Table B3d (Continued)  
Intermountain Region (Continued)

| Sample<br>Date                      | Soil Moisture Content |                 |                  |                |                 |                  | Cone<br>Index | Remold-<br>ing Index | Depth<br>to<br>Water<br>Table<br>in. | Sample<br>Date | Soil Moisture Content |                 |                  |                |                 |                  | Cone<br>Index | Remold-<br>ing Index | Depth<br>to<br>Water<br>Table<br>in. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------|-----------------------|-----------------|------------------|----------------|-----------------|------------------|---------------|----------------------|--------------------------------------|----------------|-----------------------|-----------------|------------------|----------------|-----------------|------------------|---------------|----------------------|--------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                                     | Percent Weight Basis  |                 |                  | in./6 in.      |                 |                  |               |                      |                                      |                | Percent Weight Basis  |                 |                  | in./6 in.      |                 |                  |               |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                     | 0- to<br>6-in.        | 6- to<br>12-in. | 12- to<br>18-in. | 0- to<br>6-in. | 6- to<br>12-in. | 12- to<br>18-in. |               |                      |                                      |                | 0- to<br>6-in.        | 6- to<br>12-in. | 12- to<br>18-in. | 0- to<br>6-in. | 6- to<br>12-in. | 12- to<br>18-in. |               |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                     | Depth                 | Depth           | Depth            | Depth          | Depth           | Depth            |               |                      |                                      |                | Depth                 | Depth           | Depth            | Depth          | Depth           | Depth            |               |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 72, Boise Co., Idaho           |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Site 73, Ada Co., Idaho              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sweet SL/SL (SC)                    |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Sweet L/SL (CL)                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/12/54                             | 3.1                   | 5.9             | 5.9              | 0.29           | 0.55            | 300              | ----          | ----                 | 7/12/54                              | 5.1            | 6.1                   | 6.8             | 0.47             | 0.56           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                             | 1.8                   | 3.0             | 4.1              | 0.17           | 0.28            | 300              | ----          | ----                 | 9/13/54                              | 4.6            | 5.3                   | 5.1             | 0.43             | 0.58           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                             | 1.9                   | 3.8             | 3.8              | 0.17           | 0.36            | 300              | ----          | ----                 | 9/13/54                              | 7.6            | 5.8                   | 6.0             | 0.71             | 0.54           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10/15/54                            | 5.4                   | 4.2             | 5.2              | 0.51           | 0.39            | 300              | ----          | ----                 | 10/15/54                             | 6.4            | 5.2                   | 5.3             | 0.50             | 0.48           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4/21/55                             | 19.3                  | 15.7            | 17.3             | 1.81           | 1.75            | 78               | 0.33          | ----                 | 4/21/55                              | 22.3           | 20.8                  | 16.7            | 2.12             | 1.92           | 76              | 0.38             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/11/55                             | 10.9                  | 13.9            | 16.3             | 1.02           | 1.30            | 139              | 1.43          | ----                 | 5/11/55                              | 15.0           | 15.7                  | 13.9            | 1.40             | 1.45           | 118             | 0.86             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6/5/55                              | 5.0                   | 6.5             | 10.1             | 0.47           | 0.61            | 300              | ----          | ----                 | 6/5/55                               | 7.7            | 11.0                  | 11.2            | 0.72             | 1.02           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 74, Ada Co., Idaho             |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Site 75, Ada Co., Idaho              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unclassified Sil/Sil (ML)           |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Chilcott Sil/Sil (CL)                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/12/54                             | 10.5                  | 12.6            | 16.5             | 0.70           | 0.82            | 300              | ----          | ----                 | 7/14/54                              | 3.3            | 9.4                   | 17.4            | 0.28             | 0.80           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                             | 7.1                   | 15.3            | 18.0             | 0.47           | 0.99            | 300              | ----          | ----                 | 9/13/54                              | 4.5            | 7.8                   | 2.8             | 0.38             | 0.66           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                             | 5.9                   | 13.5            | 11.4             | 0.39           | 0.37            | 300              | ----          | ----                 | 9/13/54                              | 4.0            | 9.2                   | 17.1            | 0.33             | 0.78           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10/15/54                            | 11.4                  | 11.6            | 14.1             | 0.75           | 0.75            | 300              | ----          | ----                 | 10/15/54                             | 4.6            | 5.0                   | 15.3            | 0.38             | 0.42           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/23/55                             | 18.8                  | 24.0            | 13.6             | 1.25           | 1.56            | 217              | NT            | ----                 | 3/23/55                              | 19.0           | 15.7                  | 21.1            | 1.58             | 1.13           | 300             | NT               | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4/21/55                             | 29.1                  | 26.6            | 25.4             | 1.87           | 1.72            | 163              | 0.79†         | ----                 | 4/21/55                              | 24.7           | 22.6                  | 20.5            | 2.06             | 1.91           | 300             | NT               | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/11/55                             | 16.0                  | 21.1            | 22.0             | 1.07           | 1.37            | 300              | ----          | ----                 | 5/11/55                              | 12.9           | 20.1                  | 20.9            | 1.08             | 1.10           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6/5/55                              | 11.9                  | 13.3            | 15.1             | 0.79           | 0.89            | 300              | ----          | ----                 | 6/5/55                               | 6.5            | 12.6                  | 22.3            | 0.34             | 1.07           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 76, Ada Co., Idaho             |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Site 77, Valley Co., Idaho           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Falk Sil/Sil (CL-MD)                |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Unclassified Sil/Sil (SM)            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/14/54                             | 12.8                  | 15.7            | 11.9             | 1.04           | 1.43            | 300              | ----          | ----                 | 7/13/54                              | 26.7           | 29.3                  | 25.1            | 1.71             | 2.04           | 181             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                             | 9.0                   | 6.3             | 7.4              | 0.73           | 0.32            | 300              | ----          | ----                 | 9/13/54                              | 13.1           | 10.7                  | 7.8             | 0.84             | 0.74           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/13/54                             | 3.9                   | 8.0             | 5.3              | 0.32           | 0.73            | 173              | ----          | ----                 | 9/10/54                              | 10.7           | 6.6                   | 4.4             | 0.69             | 0.46           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10/15/54                            | 30.1                  | 25.0            | 23.8             | 2.46           | 2.28            | 125              | 0.47          | 18                   | 10/15/54                             | 10.0           | 5.6                   | 4.0             | 0.64             | 0.39           | 300             | ----             | 10            |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/23/55                             | 32.9                  | 27.7            | 17.7             | 2.68           | 2.53            | 196              | ----          | DRY                  | 5/10/55                              | 44.3           | 40.7                  | 40.2            | 2.84             | 2.83           | 148             | 0.30             | 11            |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4/21/55                             | 28.7                  | 25.0            | 19.7             | 2.34           | 2.28            | 144              | 0.34          | 36                   | 6/6/55                               | 36.1           | 37.2                  | 39.7            | 2.32             | 2.59           | 191             | 0.45             | 24            |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/11/55                             | 21.6                  | 18.2            | 13.8             | 1.76           | 1.66            | 180              | ----          | 36                   |                                      |                |                       |                 |                  |                |                 |                  |               |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6/5/55                              | 12.4                  | 10.3            | 11.5             | 1.01           | 0.98            | 300              | ----          | 36                   |                                      |                |                       |                 |                  |                |                 |                  |               |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Irrigated before 10/15/54           |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 78, Jerome Co., Idaho          |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Site 79, Jerome Co., Idaho           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Portneuf Sil/SL (SM-SC)             |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Portneuf Sil/SL (ML)                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/10/54                             | 10.1                  | 14.2            | 19.9             | 1.00           | 1.47            | 300              | ----          | Flooded              | 7/10/54                              | 20.5           | 18.9                  | 17.1            | 1.89             | 1.91           | 280             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/16/54                             | 21.3                  | 20.2            | 17.0             | 2.11           | 2.10            | 251              | ----          | ----                 | 8/16/54                              | 18.4           | 16.7                  | 16.7            | 1.70             | 1.68           | 241             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/16/54                             | 13.3                  | 11.6            | 17.3             | 1.32           | 1.20            | 300              | ----          | ----                 | 9/16/54                              | 15.7           | 16.6                  | 13.9            | 1.45             | 1.67           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10/17/54                            | 10.1                  | 6.7             | 12.6             | 1.00           | 0.70            | 300              | ----          | ----                 | 10/17/54                             | 1.1            | 10.4                  | 9.4             | 1.12             | 1.05           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/22/55                             | 13.1                  | 17.1            | 11.3             | 1.30           | 1.77            | 300              | NT            | ----                 | 3/22/55                              | 15.8           | 13.6                  | 11.4            | 1.46             | 1.39           | 300             | NT               | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4/20/55                             | 15.5                  | 11.6            | 13.9             | 1.53           | 1.20            | 300              | ----          | ----                 | 4/20/55                              | 15.4           | 12.8                  | 11.9            | 1.42             | 1.29           | 300             | NT               | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/9/55                              | 9.5                   | 9.5             | 15.3             | 0.84           | 1.00            | 300              | ----          | ----                 | 5/9/55                               | 10.7           | 11.6                  | 8.1             | 0.99             | 1.17           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6/4/55                              | 17.9                  | 16.3            | 20.7             | 1.76           | 1.69            | 300              | NT            | ----                 | 6/4/55                               | 6.3            | 5.4                   | 5.9             | 0.58             | 0.54           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Irrigated before 7/10/54            |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Irrigated before 7/10/54 and 6/4/55  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 80, Jerome Co., Idaho          |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Site 81, Jerome Co., Idaho           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Portneuf Sil/Sil (CL-M)             |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Minidoka Sil/Sil (CL)                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/10/54                             | 12.8                  | 19.1            | 21.4             | 1.1            | 1.79            | 300              | ----          | ----                 | 7/10/54                              | 18.3           | 20.4                  | 24.2            | 1.31             | 1.60           | 275             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/16/54                             | 17.9                  | 22.9            | 23.1             | 1.59           | 2.14            | 300              | ----          | ----                 | 8/16/54                              | 11.4           | 15.0                  | 15.9            | 0.81             | 1.18           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/16/54                             | 20.7                  | 22.9            | 22.9             | 1.84           | 2.14            | 253              | ----          | ----                 | 9/15/54                              | 9.5            | 15.9                  | 20.5            | 0.68             | 1.25           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10/17/54                            | 18.6                  | 21.1            | 21.9             | 1.65           | 1.97            | 286              | ----          | ----                 | 10/17/54                             | 15.2           | 12.2                  | 17.6            | 1.09             | 0.96           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/22/55                             | 25.3                  | 25.6            | 27.7             | 2.25           | 2.40            | 300              | ----          | ----                 | 3/21/55                              | 20.9           | 17.2                  | 14.1            | 1.49             | 1.35           | 300             | 0.78             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4/20/55                             | 21.4                  | 18.8            | 22.9             | 1.90           | 1.76            | 186              | NT            | ----                 | 4/20/55                              | 24.0           | 19.3                  | 19.0            | 1.71             | 1.52           | 184             | NT               | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/9/55                              | 12.6                  | 17.5            | 23.7             | 1.12           | 1.64            | 300              | ----          | ----                 | 5/9/55                               | 14.0           | 15.5                  | 19.1            | 1.00             | 1.22           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6/4/55                              | 12.2                  | 18.2            | 23.4             | 1.08           | 1.70            | 300              | ----          | ----                 | 6/4/55                               | 9.3            | 14.7                  | 24.5            | 0.66             | 1.16           | 212             | NT               | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Irrigated before 7/10/54            |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 82, Jerome Co., Idaho          |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Site 83, Minidoka Co., Idaho         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Portneuf Sil/Sil (CL)               |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Paul Sil/Sil (CL)                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/10/54                             | 11.8                  | 18.1            | 20.7             | 0.96           | 1.57            | 300              | ----          | ----                 | 7/10/54                              | 11.2           | 14.0                  | 18.5            | 1.00             | 1.31           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/16/54                             | 11.1                  | 10.3            | 11.9             | 0.91           | 0.90            | 300              | ----          | ----                 | 8/16/54                              | 12.0           | 15.0                  | 19.1            | 1.07             | 1.50           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/16/54                             | 10.0                  | 10.0            | 10.1             | 0.82           | 0.87            | 300              | ----          | ----                 | 9/15/54                              | 12.7           | 18.1                  | 20.0            | 1.13             | 1.69           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10/17/54                            | 11.0                  | 8.1             | 13.1             | 0.90           | 0.70            | 300              | ----          | ----                 | 10/17/54                             | 19.4           | 19.0                  | 20.6            | 1.73             | 1.78           | 176             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/21/55                             | 27.2                  | 23.8            | 24.2             | 2.22           | 2.07            | 300              | ----          | ----                 | 3/21/55                              | 20.9           | 20.0                  | 26.9            | 1.87             | 1.37           | 233             | NT               | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4/20/55                             | 23.0                  | 21.2            | 20.9             | 1.88           | 1.84            | 300              | NT            | ----                 | 4/20/55                              | 10.0           | 18.1                  | 22.7            | 0.89             | 1.69           | 261             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/9/55                              | 13.3                  | 21.2            | 19.3             | 1.09           | 1.84            | 300              | ----          | ----                 | 5/9/55                               | 11.5           | 17.0                  | 20.1            | 1.03             | 1.59           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6/4/55                              | 12.0                  | 13.2            | 18.3             | 0.98           | 1.15            | 300              | ----          | ----                 | 6/4/55                               | 12.4           | 15.9                  | 20.3            | 1.11             | 1.49           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Irrigated before 7/10/54 and 6/4/55 |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Site 84, Minidoka Co., Idaho        |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Site 85, Minidoka Co., Idaho         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rupert Sil/Sil (SM)                 |                       |                 |                  |                |                 |                  |               |                      |                                      |                |                       |                 |                  |                |                 |                  |               |                      | Paul S/S (SM)                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7/10/54                             | 7.1                   | 7.9             | 6.8              | 0.68           | 0.80            | 300              | ----          | ----                 | 7/10/54                              | 1.7            | 2.5                   | 2.4             | 0.16             | 0.24           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/16/54                             | 10.8                  | 11.1            | 10.2             | 0.93           | 1.12            | 300              | ----          | ----                 | 8/16/54                              | 1.3            | 2.9                   | 1.7             | 0.12             | 0.29           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9/15/54                             | 6.4                   | 5.9             | 6.2              | 0.61           | 0.60            | 300              | ----          | ----                 | 9/15/54                              | 0.4            | 0.9                   | 1.5             | 0.04             | 0.08           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10/17/54                            | 11.0                  | 10.7            | 10.4             | 1.07           | 1.08            | 300              | ----          | ----                 | 10/17/54                             | 4.8            | 2.7                   | 1.8             | 0.45             | 0.25           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3/21/55                             | 15.3                  | 12.7            | 13.9             | 1.46           | 1.29            | 300              | ----          | ----                 | 3/21/55                              | 8.6            | 6.7                   | 8.0             | 0.80             | 0.63           | 247             | 1.24*            | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4/20/55                             | 14.4                  | 13.9            | 14.1             | 1.37           | 1.41            | 300              | NT            | ----                 | 4/20/55                              | 6.5            | 5.0                   | 6.5             | 0.61             | 0.47           | 265             | 1.42*            | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5/9/55                              | 12.3                  | 13.0            | 13.7             | 1.17           | 1.32            | 300              | NT            | ----                 | 5/9/55                               | 2.7            | 4.6                   | 4.7             | 0.25             | 0.43           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6/4/55                              | 13.9                  | 11.9            | 13.6             | 1.33           | 1.21            | 300              | ----          | ----                 | 6/4/55                               | 3.3            | 4.2                   | 3.1             | 0.31             | 0.40           | 300             | ----             | ----          |                      |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



Table B3d (Continued)  
Intermountain Region (Continued)

| Soil Moisture Content |                   |                    |                     |                   |                    |               |                   |                    |               | Cone Index         | Remold- ing Index  | Depth to Water Table in. |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |    |
|-----------------------|-------------------|--------------------|---------------------|-------------------|--------------------|---------------|-------------------|--------------------|---------------|--------------------|--------------------|--------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----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| Percent Weight Basis  |                   |                    |                     |                   |                    | in./6 in.     |                   |                    |               |                    |                    |                          |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |    |
| Sample Date           | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- to 18-in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- in. Depth | 0- to 6-in. Depth | 6- to 12-in. Depth | 12- in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth       | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- to 12-in. Depth | 6- |



Table B3d (Continued)  
Intermountain Region (Continued)

| Sample Date   | Soil Moisture Content |             |              |              |              |              | Cone Index | Remold- ing Index        | Depth to Water Table in. | Sample Date  | Soil Moisture Content |             |              |              |              |              | Cone Index | Remold- ing Index | Depth to Water Table in. |
|---|-----------------------|-------------|--------------|--------------|--------------|--------------|------------|--------------------------|--------------------------|--|-----------------------|-------------|--------------|--------------|--------------|--------------|------------|-------------------|--------------------------|
|   | Percent Weight Basis  |             |              |              |              |              |            |                          |                          |  | Percent Weight Basis  |             |              |              |              |              |            |                   |                          |
|   | 0 to 6-in.            | 6 to 12-in. | 12 to 18-in. | 18 to 24-in. | 24 to 30-in. | 30 to 36-in. |            |                          |                          |  | 0 to 6-in.            | 6 to 12-in. | 12 to 18-in. | 18 to 24-in. | 24 to 30-in. | 30 to 36-in. |            |                   |                          |
| Site 100, Sevier Co., Utah<br>Bedfield SICL/SICL (CL)   |                       |             |              |              |              |              |            |                          |                          | Site 101, Sevier Co., Utah<br>Bedfield CL/CL (CH)          |                       |             |              |              |              |              |            |                   |                          |
| 7/22/54   | 25.9                  | 37.5        | 39.5         | 1.96         | 3.08         | 300          | ----       | 7/22/54                  | 29.2                     | 21.3   | 23.2                  | 2.03        | 1.81         | 300          | ----         |              |            |                   |                          |
| 8/20/54   | 21.1                  | 35.8        | 37.6         | 1.75         | 2.1          | 300          | ----       | 8/20/54                  | 20.2                     | 17.8   | 12.9                  | 1.41        | 1.52         | 300          | ----         |              |            |                   |                          |
| 9/24/54   | 24.3                  | 37.7        | 38.4         | 1.84         | 3.12         | ----         | ----       | 9/24/54                  | 20.8                     | 18.8   | 19.2                  | 1.45        | 1.60         | 300          | ----         |              |            |                   |                          |
| 10/29/54  | 24.3                  | 33.6        | 35.9         | 1.84         | 4.76         | 148          | ----       | 10/29/54                 | 18.3                     | 18.2   | 18.1                  | 1.32        | 1.55         | 300          | ----         |              |            |                   |                          |
| 3/17/55   | Frozen                |             |              |              |              |              | ----       | ----                     | 4/5/55                   | 41.0   | 32.8                  | 34.0        | 2.85         | 2.79         | 111          | 0.86         |            |                   |                          |
| 4/4/55  | 31.2                  | 32.9        | 39.2         | 2.36         | 2.70         | 92           | 0.59       | 5/2/55                   | 25.4                     | 28.9   | 31.1                  | 1.77        | 2.46         | 170          | ----         |              |            |                   |                          |
| 5/2/55  | 22.5                  | 34.0        | 37.1         | 1.73         | 2.79         | 127          | ----       | 5/23/55                  | 21.8                     | 29.4   | 28.5                  | 2.21        | 2.50         | 158          | 0.98         |              |            |                   |                          |
| 5/23/55   | 21.4                  | 35.0        | 36.5         | 1.65         | 2.88         | 135          | NT         | Irrigated before 5/23/55 |                          |  |                       |             |              |              |              |              |            |                   |                          |
| Site 102, Sevier Co., Utah<br>Palasade SICL/SICL (CL)   |                       |             |              |              |              |              |            |                          |                          | Site 103, Piute Co., Utah<br>Unclassified L/L (CH)         |                       |             |              |              |              |              |            |                   |                          |
| 7/23/54   | 15.7                  | 16.5        | 13.6         | 1.33         | 1.41         | 700          | ----       | 7/23/54                  | 32.1                     | 42.9   | 53.1                  | 2.00        | 2.99         | 128          | ----         |              |            |                   |                          |
| 8/20/54   | 15.1                  | 19.7        | 15.2         | 1.28         | 1.68         | 300          | ----       | 8/20/54                  | 26.0                     | 39.0   | 44.0                  | 1.62        | 2.71         | 300          | ----         |              |            |                   |                          |
| 9/24/54   | 16.4                  | 15.5        | 19.3         | 1.39         | 1.41         | 300          | ----       | 9/24/54                  | 28.3                     | 42.7   | 53.9                  | 1.77        | 2.97         | 300          | ----         |              |            |                   |                          |
| 10/29/54  | 14.2                  | 16.2        | 18.1         | 1.70         | 1.38         | 300          | ----       | 10/29/54                 | 41.7                     | 44.7   | 52.3                  | 2.50        | 3.11         | 103          | 0.86         |              |            |                   |                          |
| 3/17/55   | 27.1                  | 17.5        | ----         | 2.29         | 1.49         | 214          | ----       | 4/5/55                   | 53.0                     | 51.3   | 57.6                  | 3.31        | 3.57         | 66           | 0.58         |              |            |                   |                          |
| 4/5/55  | 21.7                  | 23.6        | 23.4         | 1.84         | 2.01         | 169          | NT         | 5/2/55                   | 49.2                     | 52.6   | 57.0                  | 3.07        | 3.66         | 77           | 19           |              |            |                   |                          |
| 5/2/55  | 17.2                  | 19.4        | 23.7         | 1.40         | 1.65         | 218          | ----       | 5/24/55                  | 46.4                     | 50.8   | 50.0                  | 2.90        | 3.54         | 122          | ----         |              |            |                   |                          |
| 5/23/55   | 12.6                  | 20.1        | 13.7         | 1.07         | 1.71         | 300          | ----       | Irrigated before 5/24/55 |                          |  |                       |             |              |              |              |              |            |                   |                          |
| Site 104, Piute Co., Utah<br>Wa. 1314 SICL/SICL (CL-ML) |                       |             |              |              |              |              |            |                          |                          | Site 105, Garfield Co., Utah<br>Bedfield L/L (CL)          |                       |             |              |              |              |              |            |                   |                          |
| 7/23/54   | 14.7                  | 12.3        | 8.3          | 1.41         | 1.21         | 300          | ----       | 7/23/54                  | 38.3                     | 27.7   | 20.6                  | 2.83        | 2.54         | 155          | ----         |              |            |                   |                          |
| 8/20/54   | 8.8                   | 9.1         | 6.5          | 0.84         | 0.90         | 300          | ----       | 8/20/54                  | 20.3                     | 15.6   | 15.4                  | 1.50        | 1.43         | 300          | ----         |              |            |                   |                          |
| 9/24/54   | 12.7                  | 15.6        | 14.5         | 1.22         | 1.54         | 300          | ----       | 9/24/54                  | 19.8                     | 14.1   | 13.4                  | 1.46        | 1.29         | 300          | ----         |              |            |                   |                          |
| 10/29/54  | 7.9                   | 10.8        | 11.5         | 0.75         | 1.06         | 300          | ----       | 10/29/54                 | 15.7                     | 11.9   | 8.6                   | 1.16        | 1.09         | 300          | ----         |              |            |                   |                          |
| 4/5/55  | 12.0                  | 13.0        | 12.1         | 1.15         | 1.28         | 300          | NT         | 4/5/55                   | 27.3                     | 20.9   | 17.3                  | 2.01        | 1.92         | 191          | NT           |              |            |                   |                          |
| 5/2/55  | 14.0                  | 17.5        | 18.3         | 1.34         | 1.72         | 300          | ----       | 5/2/55                   | 17.1                     | 16.7   | 14.9                  | 1.26        | 1.53         | 300          | ----         |              |            |                   |                          |
| 5/24/55   | 15.7                  | 17.0        | 17.7         | 1.41         | 1.67         | 300          | NT         | 5/24/55                  | 20.5                     | 19.1   | 17.2                  | 1.51        | 1.75         | 300          | ----         |              |            |                   |                          |
| Irrigated before 5/24/55 and 5/24/55                    |                       |             |              |              |              |              |            |                          |                          | Irrigated before 5/24/55                                   |                       |             |              |              |              |              |            |                   |                          |
| Site 106, Washington Co., Utah<br>Bedfield L/L (CL)     |                       |             |              |              |              |              |            |                          |                          | Site 107, Washington Co., Utah<br>Bedfield L/L (CL)        |                       |             |              |              |              |              |            |                   |                          |
| 7/23/54   | 16.7                  | 17.8        | 18.4         | 1.43         | 1.77         | 249          | ----       | 7/23/54                  | 15.1                     | 17.2   | 19.8                  | 1.90        | 1.62         | 300          | ----         |              |            |                   |                          |
| 8/20/54   | 9.8                   | 11.0        | 10.3         | 0.76         | 1.10         | 300          | ----       | 8/20/54                  | 10.2                     | 11.9   | 16.3                  | 0.95        | 1.12         | 300          | ----         |              |            |                   |                          |
| 9/24/54   | 23.3                  | 19.0        | 20.6         | 2.00         | 1.89         | 126          | NT         | 9/24/54                  | 11.5                     | 14.8   | 16.1                  | 1.07        | 1.39         | 300          | ----         |              |            |                   |                          |
| 10/29/54  | 13.2                  | 14.6        | 17.7         | 1.13         | 1.45         | 264          | ----       | 10/29/54                 | 11.3                     | 6.7  | 12.8                  | 1.05        | 0.63         | 300          | ----         |              |            |                   |                          |
| 2/16/55   | 21.8                  | 17.8        | 20.2         | 1.87         | 1.87         | 136          | 1.13       | 2/16/55                  | 17.5                     | 16.7   | 16.2                  | 1.63        | 1.55         | 290          | NT           |              |            |                   |                          |
| 3/8/55  | 18.4                  | 18.7        | 19.5         | 1.58         | 1.86         | 191          | ----       | 3/8/55                   | 16.0                     | 15.5   | 13.5                  | 1.49        | 1.46         | 207          | ----         |              |            |                   |                          |
| 4/5/55  | 23.7                  | 20.3        | 21.9         | 2.03         | 2.02         | 117          | 0.76       | 4/5/55                   | 12.3                     | 14.3   | 18.8                  | 1.14        | 1.35         | 300          | NT           |              |            |                   |                          |
| 5/3/55  | 20.6                  | 22.1        | 20.7         | 1.77         | 2.20         | 145          | ----       | 5/3/55                   | 9.2                      | 13.4   | 18.6                  | 0.86        | 1.26         | 300          | ----         |              |            |                   |                          |
| Irrigated before 7/23/54 and 9/24/54                    |                       |             |              |              |              |              |            |                          |                          | Irrigated before 5/24/55                                   |                       |             |              |              |              |              |            |                   |                          |
| Site 108, Washington Co., Utah<br>Lawrin SICL/SICL (CL) |                       |             |              |              |              |              |            |                          |                          | Site 109, Washington Co., Utah<br>Bedfield CL/CL (CL)      |                       |             |              |              |              |              |            |                   |                          |
| 7/25/54   | 16.3                  | 14.2        | 12.5         | 1.28         | 1.24         | 300          | ----       | 7/25/54                  | 24.5                     | 23.4   | 21.7                  | 2.26        | 2.39         | 300          | ----         |              |            |                   |                          |
| 8/22/54   | 11.5                  | 12.4        | 8.2          | 0.90         | 1.08         | 300          | ----       | 8/22/54                  | 21.2                     | 21.8   | 22.6                  | 1.96        | 2.22         | 300          | ----         |              |            |                   |                          |
| 9/23/54   | 22.4                  | 21.4        | 18.5         | 1.76         | 1.86         | 235          | ----       | 9/23/54                  | 25.9                     | 23.7   | 23.4                  | 2.39        | 2.42         | 161          | ----         |              |            |                   |                          |
| 10/28/54  | 16.2                  | 16.3        | 14.4         | 1.27         | 1.42         | 300          | ----       | 10/28/54                 | 33.3                     | 24.6   | 23.6                  | 3.08        | 2.51         | 111          | 0.38         |              |            |                   |                          |
| 2/16/55   | 31.5                  | 27.1        | 21.9         | 2.48         | 1.38         | 179          | 0.83       | 2/16/55                  | 34.3                     | 26.1   | 26.6                  | 3.07        | 2.66         | 161          | 1.15         |              |            |                   |                          |
| 3/8/55  | 27.0                  | 24.3        | 23.7         | 2.19         | 1.23         | 184          | ----       | 3/8/55                   | 12.5                     | 24.6   | 23.8                  | 3.00        | 2.51         | 137          | 0.42         |              |            |                   |                          |
| 4/5/55  | 31.4                  | 24.0        | 46.8         | 2.47         | 3.04         | 142          | ----       | 4/5/55                   | 30.6                     | 24.7   | 26.5                  | 2.83        | 2.52         | 159          | NT           |              |            |                   |                          |
| 5/3/55  | Site Saturated        |             |              |              |              |              | 107        | ----                     | 5/3/55                   | 29.3   | 21.9                  | 16.3        | 2.71         | 2.23         | 177          | 0.72         |            |                   |                          |
| Irrigated before 9/23/54                                |                       |             |              |              |              |              |            |                          |                          | Bulk density values questionable. Irrigated before 9/23/54 |                       |             |              |              |              |              |            |                   |                          |
| Site 110, Washington Co., Utah<br>Bracken LS/LS (SM)    |                       |             |              |              |              |              |            |                          |                          | Site 111, Washington Co., Utah<br>Gila SICL/SICL (SM)      |                       |             |              |              |              |              |            |                   |                          |
| 7/25/54   | 2.0                   | 2.6         | 6.5          | 0.19         | 0.24         | 300          | ----       | 7/25/54                  | 12.8                     | 20.9   | 20.4                  | 1.18        | 1.84         | 300          | ----         |              |            |                   |                          |
| 8/22/54   | 1.2                   | 1.4         | 4.1          | 0.11         | 0.13         | 300          | ----       | 8/22/54                  | 14.0                     | 19.7   | 16.4                  | 1.29        | 1.74         | 300          | ----         |              |            |                   |                          |
| 9/23/54   | 1.9                   | 2.2         | 2.8          | 0.18         | 0.21         | 300          | ----       | 9/23/54                  | 11.5                     | 19.1   | 14.5                  | 1.06        | 1.68         | 300          | ----         |              |            |                   |                          |
| 10/28/54  | 0.6                   | 2.0         | 4.1          | 0.06         | 0.19         | 300          | ----       | 10/28/54                 | 11.9                     | 20.4   | 14.4                  | 1.10        | 1.80         | 300          | ----         |              |            |                   |                          |
| 2/16/55   | 5.2                   | 7.8         | 9.1          | 0.49         | 0.73         | 198          | NT         | 2/16/55                  | 15.5                     | 18.1   | 25.1                  | 1.43        | 1.60         | 293          | NT           |              |            |                   |                          |
| 3/8/55  | 5.1                   | 6.4         | 7.7          | 0.48         | 0.60         | 287          | ----       | 3/8/55                   | 12.2                     | 19.5   | 20.0                  | 1.13        | 1.72         | 292          | ----         |              |            |                   |                          |
| 4/5/55  | 2.7                   | 5.1         | 13.9         | 0.26         | 0.48         | 300          | ----       | 4/5/55                   | 14.5                     | 23.4   | 19.9                  | 1.34        | 2.06         | 300          | ----         |              |            |                   |                          |
| 5/3/55  | 1.8                   | 3.4         | 4.4          | 0.17         | 0.17         | 300          | ----       | 5/3/55                   | 14.8                     | 18.2   | 17.1                  | 1.37        | 1.61         | 300          | ----         |              |            |                   |                          |
| Site 112, Washington Co., Utah<br>Gila L/S (SM)         |                       |             |              |              |              |              |            |                          |                          | Site 113, Washington Co., Utah<br>Saint George L/S (SL)    |                       |             |              |              |              |              |            |                   |                          |
| 7/25/54   | 29.7                  | 17.6        | 12.8         | 2.42         | 1.63         | 300          | ----       | 7/25/54                  | 1.7                      | 1.3  | 2.4                   | 0.16        | 0.13         | 300          | ----         |              |            |                   |                          |
| 8/22/54   | 26.6                  | 13.2        | 9.0          | 2.17         | 1.22         | 300          | ----       | 8/22/54                  | 0.55                     | 0.61   | 1.23                  | 0.05        | 0.06         | 300          | ----         |              |            |                   |                          |
| 9/23/54   | 31.2                  | 14.1        | 11.3         | 2.55         | 1.30         | 300          | ----       | 9/23/54                  | 0.6                      | 1.0  | 1.0                   | 0.06        | 0.10         | 300          | ----         |              |            |                   |                          |
| 10/28/54  | 48.2                  | 17.4        | 16.4         | ----         | ----         | 300          | ----       | 10/28/54                 | 0.3                      | 1.3  | 0.9                   | 0.03        | 0.13         | 300          | ----         |              |            |                   |                          |
| 2/16/55   | 35.5                  | 23.4        | 20.9         | 2.90         | 4.15         | 293          | NT         | 2/16/55                  | 4.0                      | 6.0  | 5.0                   | 0.38        | 0.58         | 215          | NT           |              |            |                   |                          |
| 3/18/55   | 15.1                  | 23.7        | 19.9         | 2.95         | 2.19         | 292          | 32         | 3/8/55                   | 5.0                      | 5.9  | 4.5                   | 0.48        | 0.57         | 266          | ----         |              |            |                   |                          |
| 4/5/55  | 27.6                  | 24.0        | 18.0         | 2.25         | 2.22         | 300          | NT*        | 4/6/55                   | 3.6                      | 4.3  | 4.5                   | 0.35        | 0.42         | 278          | 1.71*        |              |            |                   |                          |
| 5/3/55  | 32.0                  | 25.9        | 23.6         | 2.61         | 2.39         | 278          | 22         | 5/3/55                   | 2.6                      | 5.6  | 2.3                   | 0.25        | 0.54         | 300          | ----         |              |            |                   |                          |

(Continued)

Note: NT : no test.  
\* Vibrated remolding test.

<sup>1</sup> Measurement of 0- 6-inch layer.



Table 33d (Continued)  
Intermountain Region (Continued)

| Sample Date                    | Soil Moisture Content |                 |                     |                |                 |                     | Remold-<br>ing<br>Index | Depth to<br>Water<br>Table<br>in. | Sample<br>Date | Soil Moisture Content |                 |                     |                |                 |                     | Remold-<br>ing<br>Index | Depth to<br>Water<br>Table<br>in. |         |      |      |      |      |      |     |      |
|--------------------------------|-----------------------|-----------------|---------------------|----------------|-----------------|---------------------|-------------------------|-----------------------------------|----------------|-----------------------|-----------------|---------------------|----------------|-----------------|---------------------|-------------------------|-----------------------------------|---------|------|------|------|------|------|-----|------|
|                                | Percent Weight Basis  |                 |                     |                |                 |                     |                         |                                   |                | Percent Weight Basis  |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
|                                | 0- to<br>6-in.        | 6- to<br>12-in. | 12-in.<br>to 18-in. | 0- to<br>6-in. | 6- to<br>12-in. | 12-in.<br>to 18-in. |                         |                                   |                | 0- to<br>6-in.        | 6- to<br>12-in. | 12-in.<br>to 18-in. | 0- to<br>6-in. | 6- to<br>12-in. | 12-in.<br>to 18-in. |                         |                                   |         |      |      |      |      |      |     |      |
| Site 114, Washington Co., Utah |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| Tobler S/S (SM)                |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| 7/25/54                        | 0.8                   | 3.3             | 1.7                 | 0.06           | 0.33            | 300                 | ----                    | 7/25/54                           | 4.7            | 5.4                   | 8.0             | 0.39                | 0.49           | 300             | ----                | 7/25/54                 | 4.7                               | 5.4     | 8.0  | 0.39 | 0.49 | 300  | ---- |     |      |
| 8/22/54                        | 0.5                   | 1.2             | 0.2                 | 0.05           | 0.12            | 300                 | ----                    | 8/22/54                           | 4.9            | 7.1                   | 5.9             | 0.40                | 0.64           | 300             | ----                | 8/22/54                 | 4.9                               | 7.1     | 5.9  | 0.40 | 0.64 | 300  | ---- |     |      |
| 9/23/54                        | 0.0                   | 1.8             | 1.4                 | 0.00           | 0.18            | 300                 | ----                    | 9/23/54                           | 4.7            | 7.0                   | 7.7             | 0.39                | 0.63           | 300             | ----                | 9/23/54                 | 4.7                               | 7.0     | 7.7  | 0.39 | 0.63 | 300  | ---- |     |      |
| 10/28/54                       | 0.0                   | 0.8             | 1.5                 | 0.00           | 0.06            | 300                 | ----                    | 10/28/54                          | 5.5            | 6.7                   | 5.9             | 0.45                | 0.60           | 300             | ----                | 10/28/54                | 5.5                               | 6.7     | 5.9  | 0.45 | 0.60 | 300  | ---- |     |      |
| 7/15/55                        | 4.0                   | 4.6             | 4.7                 | 0.38           | 0.47            | 154                 | NT                      | 7/15/55                           | 24.0           | 15.3                  | 12.1            | 1.97                | 1.38           | 300             | NT                  | 7/15/55                 | 24.0                              | 15.3    | 12.1 | 1.97 | 1.38 | 300  | NT   |     |      |
| 3/8/55                         | 1.8                   | 4.5             | 4.0                 | 0.7            | 0.42            | 189                 | ----                    | 3/8/55                            | 14.4           | 9.2                   | 8.8             | 1.18                | 0.83           | 300             | ----                | 3/8/55                  | 14.4                              | 9.2     | 8.8  | 1.18 | 0.83 | 300  | ---- |     |      |
| 4/6/55                         | 1.4                   | 1.2             | 2.9                 | 0.13           | 0.26            | 300                 | ----                    | 4/6/55                            | 5/3/55         | 6.5                   | 13.9            | 11.6                | 0.53           | 1.25            | 300                 | ----                    | 4/6/55                            | 5/3/55  | 6.5  | 13.9 | 11.6 | 0.53 | 1.25 | 300 | ---- |
| 5/3/55                         | 0.5                   | 1.4             | 1.3                 | 0.05           | 0.14            | 300                 | ----                    | 5/3/55                            | 5/24/55        | 7.0                   | 10.0            | 8.7                 | 0.58           | 0.93            | 300                 | ----                    | 5/3/55                            | 5/24/55 | 7.0  | 10.0 | 8.7  | 0.58 | 0.93 | 300 | ---- |
| Site 115, Washington Co., Utah |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| Muelina L/SI (SM)              |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| 7/25/54                        | 6.5                   | 6.9             | 8.8                 | 0.57           | 0.63            | 300                 | ----                    | 7/25/54                           | 5.9            | 3.8                   | 6.6             | 0.54                | 0.35           | 300             | ----                | 7/25/54                 | 5.9                               | 3.8     | 6.6  | 0.54 | 0.35 | 300  | ---- |     |      |
| 8/22/54                        | 4.9                   | 5.5             | 6.1                 | 0.43           | 0.50            | 300                 | ----                    | 8/22/54                           | 3.7            | 3.6                   | 5.2             | 0.34                | 0.33           | 300             | ----                | 8/22/54                 | 3.7                               | 3.6     | 5.2  | 0.34 | 0.33 | 300  | ---- |     |      |
| 9/23/54                        | 4.3                   | 4.9             | 5.1                 | 0.38           | 0.45            | 300                 | ----                    | 9/23/54                           | 1.6            | 2.8                   | 3.3             | 0.15                | 0.26           | 300             | ----                | 9/23/54                 | 1.6                               | 2.8     | 3.3  | 0.15 | 0.26 | 300  | ---- |     |      |
| 10/28/54                       | 4.7                   | 5.9             | 6.8                 | 0.42           | 0.54            | 300                 | ----                    | 10/28/54                          | 4.4            | 3.1                   | 8.4             | 0.40                | 0.29           | 300             | ----                | 10/28/54                | 4.4                               | 3.1     | 8.4  | 0.40 | 0.29 | 300  | ---- |     |      |
| 3/8/55                         | 20.1                  | 16.3            | 7.3                 | 1.76           | 1.53            | 256                 | 0.53†                   | 3/8/55                            | 20.0           | 14.6                  | 17.8            | 1.82                | 1.36           | 147             | NT                  | 3/8/55                  | 20.0                              | 14.6    | 17.8 | 1.82 | 1.36 | 147  | NT   |     |      |
| 4/6/55                         | 12.5                  | 11.2            | 1.6                 | 1.10           | 1.02            | 300                 | NT                      | 4/6/55                            | 9.3            | 12.8                  | 14.6            | 0.85                | 1.19           | 285             | NT                  | 4/6/55                  | 9.3                               | 12.8    | 14.6 | 0.85 | 1.19 | 285  | NT   |     |      |
| 5/3/55                         | 9.0                   | 12.1            | 10.9                | 0.79           | 1.10            | 300                 | ----                    | 5/3/55                            | 7.4            | 11.1                  | 13.6            | 0.67                | 1.03           | 300             | ----                | 5/3/55                  | 7.4                               | 11.1    | 13.6 | 0.67 | 1.03 | 300  | ---- |     |      |
| 5/24/55                        | 6.4                   | 11.8            | 9.3                 | 0.74           | 1.08            | 300                 | ----                    | 5/24/55                           | 3.6            | 6.6                   | 5.7             | 0.33                | 0.61           | 300             | ----                | 5/24/55                 | 3.6                               | 6.6     | 5.7  | 0.33 | 0.61 | 300  | ---- |     |      |
| Site 116, Washington Co., Utah |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| Tobler S/S (CL)                |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| 7/26/54                        | 18.7                  | 27.2            | 28.0                | 1.17           | 1.76            | 300                 | ----                    | 7/26/54                           | 8.9            | 8.8                   | 13.0            | 0.74                | 0.62           | 300             | ----                | 7/26/54                 | 8.9                               | 8.8     | 13.0 | 0.74 | 0.62 | 300  | ---- |     |      |
| 8/22/54                        | 20.0                  | 26.8            | 27.8                | 1.25           | 1.74            | 300                 | ----                    | 8/22/54                           | 8.8            | 10.9                  | 9.6             | 0.73                | 0.77           | 300             | ----                | 8/22/54                 | 8.8                               | 10.9    | 9.6  | 0.73 | 0.77 | 300  | ---- |     |      |
| 9/23/54                        | 15.8                  | 25.5            | 26.6                | 0.99           | 1.66            | 300                 | ----                    | 9/23/54                           | 8.1            | 10.4                  | 10.9            | 0.67                | 0.74           | 300             | ----                | 9/23/54                 | 8.1                               | 10.4    | 10.9 | 0.67 | 0.74 | 300  | ---- |     |      |
| 10/28/54                       | 19.2                  | 26.9            | 25.4                | 1.20           | 1.74            | 300                 | ----                    | 10/28/54                          | 8.1            | 10.2                  | 9.4             | 0.67                | 0.72           | 300             | ----                | 10/28/54                | 8.1                               | 10.2    | 9.4  | 0.67 | 0.72 | 300  | ---- |     |      |
| 3/8/55                         | 23.2                  | 28.7            | 29.3                | 1.45           | 1.86            | 300                 | ----                    | 3/8/55                            | 16.4           | 15.0                  | 10.7            | 1.36                | 1.06           | 300             | ----                | 3/8/55                  | 16.4                              | 15.0    | 10.7 | 1.36 | 1.06 | 300  | ---- |     |      |
| 4/6/55                         | 21.4                  | 27.8            | 28.5                | 1.34           | 1.80            | 300                 | ----                    | 4/6/55                            | 12.8           | 14.7                  | 11.6            | 1.06                | 1.04           | 300             | ----                | 4/6/55                  | 12.8                              | 14.7    | 11.6 | 1.06 | 1.04 | 300  | ---- |     |      |
| 5/3/55                         | 16.7                  | 23.8            | 21.8                | 1.04           | 1.54            | 300                 | ----                    | 5/3/55                            | 10.0           | 14.4                  | 11.4            | 0.83                | 1.02           | 300             | ----                | 5/3/55                  | 10.0                              | 14.4    | 11.4 | 0.83 | 1.02 | 300  | ---- |     |      |
| 5/24/55                        | 10.1                  | 27.0            | 30.6                | 0.63           | 1.75            | 300                 | ----                    | 5/24/55                           | 6.7            | 13.9                  | 11.6            | 0.55                | 0.98           | 300             | ----                | 5/24/55                 | 6.7                               | 13.9    | 11.6 | 0.55 | 0.98 | 300  | ---- |     |      |
| Site 117, Washington Co., Utah |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| Tobler S/S (SM)                |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| 7/26/54                        | 13.1                  | 7.7             | 6.0                 | 1.11           | 0.78            | 300                 | ----                    | 7/26/54                           | 4.8            | 3.4                   | 3.0             | 0.43                | 0.29           | 300             | ----                | 7/26/54                 | 4.8                               | 3.4     | 3.0  | 0.43 | 0.29 | 300  | ---- |     |      |
| 8/22/54                        | 7.6                   | 5.5             | 10.0                | 0.64           | 0.56            | 300                 | ----                    | 8/22/54                           | 2.9            | 1.5                   | 3.8             | 0.26                | 0.13           | 300             | ----                | 8/22/54                 | 2.9                               | 1.5     | 3.8  | 0.26 | 0.13 | 300  | ---- |     |      |
| 9/22/54                        | 6.9                   | 7.3             | 6.5                 | 0.52           | 0.74            | 300                 | ----                    | 9/22/54                           | 0.3            | 1.5                   | 1.3             | 0.03                | 0.13           | 300             | ----                | 9/22/54                 | 0.3                               | 1.5     | 1.3  | 0.03 | 0.13 | 300  | ---- |     |      |
| 10/28/54                       | 9.1                   | 6.7             | 7.0                 | 0.77           | 0.68            | 300                 | ----                    | 10/28/54                          | 2.7            | 1.9                   | 2.5             | 0.64                | 0.16           | 300             | ----                | 10/28/54                | 2.7                               | 1.9     | 2.5  | 0.64 | 0.16 | 300  | ---- |     |      |
| 3/9/55                         | 17.0                  | 10.5            | 7.9                 | 1.44           | 1.06            | 300                 | NT                      | 3/9/55                            | 11.0           | 11.7                  | 8.2             | 0.64                | 1.00           | 119             | NT                  | 3/9/55                  | 11.0                              | 11.7    | 8.2  | 0.64 | 1.00 | 119  | NT   |     |      |
| 4/6/55                         | 12.1                  | 11.8            | 7.9                 | 1.02           | 1.20            | 300                 | ----                    | 4/6/55                            | 9.7            | 12.8                  | 10.4            | 0.86                | 1.09           | 132             | NT                  | 4/6/55                  | 9.7                               | 12.8    | 10.4 | 0.86 | 1.09 | 132  | NT   |     |      |
| 5/3/55                         | 8.8                   | 9.0             | 7.6                 | 0.74           | 0.91            | 300                 | ----                    | 5/3/55                            | 5.9            | 9.1                   | 7.4             | 0.52                | 0.78           | 148             | ----                | 5/3/55                  | 5.9                               | 9.1     | 7.4  | 0.52 | 0.78 | 148  | ---- |     |      |
| 5/24/55                        | 5.4                   | 8.2             | 7.7                 | 0.46           | 0.83            | 300                 | ----                    | 5/24/55                           | 4.7            | 8.0                   | 7.3             | 0.42                | 0.62           | 300             | ----                | 5/24/55                 | 4.7                               | 8.0     | 7.3  | 0.42 | 0.62 | 300  | ---- |     |      |
| Site 118, Iron Co., Utah       |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| Unclassified SIL/SIL (CL)      |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| 7/26/54                        | 13.1                  | 7.7             | 6.0                 | 1.11           | 0.78            | 300                 | ----                    | 7/26/54                           | 4.8            | 3.4                   | 3.0             | 0.43                | 0.29           | 300             | ----                | 7/26/54                 | 4.8                               | 3.4     | 3.0  | 0.43 | 0.29 | 300  | ---- |     |      |
| 8/22/54                        | 7.6                   | 5.5             | 10.0                | 0.64           | 0.56            | 300                 | ----                    | 8/22/54                           | 2.9            | 1.5                   | 3.8             | 0.26                | 0.13           | 300             | ----                | 8/22/54                 | 2.9                               | 1.5     | 3.8  | 0.26 | 0.13 | 300  | ---- |     |      |
| 9/22/54                        | 6.9                   | 7.3             | 6.5                 | 0.52           | 0.74            | 300                 | ----                    | 9/22/54                           | 0.3            | 1.5                   | 1.3             | 0.03                | 0.13           | 300             | ----                | 9/22/54                 | 0.3                               | 1.5     | 1.3  | 0.03 | 0.13 | 300  | ---- |     |      |
| 10/28/54                       | 9.1                   | 6.7             | 7.0                 | 0.77           | 0.68            | 300                 | ----                    | 10/28/54                          | 2.7            | 1.9                   | 2.5             | 0.64                | 0.16           | 300             | ----                | 10/28/54                | 2.7                               | 1.9     | 2.5  | 0.64 | 0.16 | 300  | ---- |     |      |
| 3/9/55                         | 17.0                  | 10.5            | 7.9                 | 1.44           | 1.06            | 300                 | NT                      | 3/9/55                            | 11.0           | 11.7                  | 8.2             | 0.64                | 1.00           | 119             | NT                  | 3/9/55                  | 11.0                              | 11.7    | 8.2  | 0.64 | 1.00 | 119  | NT   |     |      |
| 4/6/55                         | 12.1                  | 11.8            | 7.9                 | 1.02           | 1.20            | 300                 | ----                    | 4/6/55                            | 9.7            | 12.8                  | 10.4            | 0.86                | 1.09           | 132             | NT                  | 4/6/55                  | 9.7                               | 12.8    | 10.4 | 0.86 | 1.09 | 132  | NT   |     |      |
| 5/3/55                         | 8.8                   | 9.0             | 7.6                 | 0.74           | 0.91            | 300                 | ----                    | 5/3/55                            | 5.9            | 9.1                   | 7.4             | 0.52                | 0.78           | 148             | ----                | 5/3/55                  | 5.9                               | 9.1     | 7.4  | 0.52 | 0.78 | 148  | ---- |     |      |
| 5/24/55                        | 5.4                   | 8.2             | 7.7                 | 0.46           | 0.83            | 300                 | ----                    | 5/24/55                           | 4.7            | 8.0                   | 7.3             | 0.42                | 0.62           | 300             | ----                | 5/24/55                 | 4.7                               | 8.0     | 7.3  | 0.42 | 0.62 | 300  | ---- |     |      |
| Site 119, Iron Co., Utah       |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| Unclassified SIL/SIL (CL)      |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| 7/26/54                        | 13.1                  | 7.7             | 6.0                 | 1.11           | 0.78            | 300                 | ----                    | 7/26/54                           | 4.8            | 3.4                   | 3.0             | 0.43                | 0.29           | 300             | ----                | 7/26/54                 | 4.8                               | 3.4     | 3.0  | 0.43 | 0.29 | 300  | ---- |     |      |
| 8/22/54                        | 7.6                   | 5.5             | 10.0                | 0.64           | 0.56            | 300                 | ----                    | 8/22/54                           | 2.9            | 1.5                   | 3.8             | 0.26                | 0.13           | 300             | ----                | 8/22/54                 | 2.9                               | 1.5     | 3.8  | 0.26 | 0.13 | 300  | ---- |     |      |
| 9/22/54                        | 6.9                   | 7.3             | 6.5                 | 0.52           | 0.74            | 300                 | ----                    | 9/22/54                           | 0.3            | 1.5                   | 1.3             | 0.03                | 0.13           | 300             | ----                | 9/22/54                 | 0.3                               | 1.5     | 1.3  | 0.03 | 0.13 | 300  | ---- |     |      |
| 10/28/54                       | 9.1                   | 6.7             | 7.0                 | 0.77           | 0.68            | 300                 | ----                    | 10/28/54                          | 2.7            | 1.9                   | 2.5             | 0.64                | 0.16           | 300             | ----                | 10/28/54                | 2.7                               | 1.9     | 2.5  | 0.64 | 0.16 | 300  | ---- |     |      |
| 3/9/55                         | 17.0                  | 10.5            | 7.9                 | 1.44           | 1.06            | 300                 | NT                      | 3/9/55                            | 11.0           | 11.7                  | 8.2             | 0.64                | 1.00           | 119             | NT                  | 3/9/55                  | 11.0                              | 11.7    | 8.2  | 0.64 | 1.00 | 119  | NT   |     |      |
| 4/6/55                         | 12.1                  | 11.8            | 7.9                 | 1.02           | 1.20            | 300                 | ----                    | 4/6/55                            | 9.7            | 12.8                  | 10.4            | 0.86                | 1.09           | 132             | NT                  | 4/6/55                  | 9.7                               | 12.8    | 10.4 | 0.86 | 1.09 | 132  | NT   |     |      |
| 5/3/55                         | 8.8                   | 9.0             | 7.6                 | 0.74           | 0.91            | 300                 | ----                    | 5/3/55                            | 5.9            | 9.1                   | 7.4             | 0.52                | 0.78           | 148             | ----                | 5/3/55                  | 5.9                               | 9.1     | 7.4  | 0.52 | 0.78 | 148  | ---- |     |      |
| 5/24/55                        | 5.4                   | 8.2             | 7.7                 | 0.46           | 0.83            | 300                 | ----                    | 5/24/55                           | 4.7            | 8.0                   | 7.3             | 0.42                | 0.62           | 300             | ----                | 5/24/55                 | 4.7                               | 8.0     | 7.3  | 0.42 | 0.62 | 300  | ---- |     |      |
| Site 120, Iron Co., Utah       |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| Unclassified SIL/SIL (CL)      |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| 7/26/54                        | 13.1                  | 7.7             | 6.0                 | 1.11           | 0.78            | 300                 | ----                    | 7/26/54                           | 4.8            | 3.4                   | 3.0             | 0.43                | 0.29           | 300             | ----                | 7/26/54                 | 4.8                               | 3.4     | 3.0  | 0.43 | 0.29 | 300  | ---- |     |      |
| 8/22/54                        | 7.6                   | 5.5             | 10.0                | 0.64           | 0.56            | 300                 | ----                    | 8/22/54                           | 2.9            | 1.5                   | 3.8             | 0.26                | 0.13           | 300             | ----                | 8/22/54                 | 2.9                               | 1.5     | 3.8  | 0.26 | 0.13 | 300  | ---- |     |      |
| 9/22/54                        | 6.9                   | 7.3             | 6.5                 | 0.52           | 0.74            | 300                 | ----                    | 9/22/54                           | 0.3            | 1.5                   | 1.3             | 0.03                | 0.13           | 300             | ----                | 9/22/54                 | 0.3                               | 1.5     | 1.3  | 0.03 | 0.13 | 300  | ---- |     |      |
| 10/28/54                       | 9.1                   | 6.7             | 7.0                 | 0.77           | 0.68            | 300                 | ----                    | 10/28/54                          | 2.7            | 1.9                   | 2.5             | 0.64                | 0.16           | 300             | ----                | 10/28/54                | 2.7                               | 1.9     | 2.5  | 0.64 | 0.16 | 300  | ---- |     |      |
| 3/9/55                         | 17.0                  | 10.5            | 7.9                 | 1.44           | 1.06            | 300                 | NT                      | 3/9/55                            | 11.0           | 11.7                  | 8.2             | 0.64                | 1.00           | 119             | NT                  | 3/9/55                  | 11.0                              | 11.7    | 8.2  | 0.64 | 1.00 | 119  | NT   |     |      |
| 4/6/55                         | 12.1                  | 11.8            | 7.9                 | 1.02           | 1.20            | 300                 | ----                    | 4/6/55                            | 9.7            | 12.8                  | 10.4            | 0.86                | 1.09           | 132             | NT                  | 4/6/55                  | 9.7                               | 12.8    | 10.4 | 0.86 | 1.09 | 132  | NT   |     |      |
| 5/3/55                         | 8.8                   | 9.0             | 7.6                 | 0.74           | 0.91            | 300                 | ----                    | 5/3/55                            | 5.9            | 9.1                   | 7.4             | 0.52                | 0.78           | 148             | ----                | 5/3/55                  | 5.9                               | 9.1     | 7.4  | 0.52 | 0.78 | 148  | ---- |     |      |
| 5/24/55                        | 5.4                   | 8.2             | 7.7                 | 0.46           | 0.83            | 300                 | ----                    | 5/24/55                           | 4.7            | 8.0                   | 7.3             | 0.42                | 0.62           | 300             | ----                | 5/24/55                 | 4.7                               | 8.0     | 7.3  | 0.42 | 0.62 | 300  | ---- |     |      |
| Site 121, Iron Co., Utah       |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| Mayfield SIL/SIL (SM)          |                       |                 |                     |                |                 |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |
| 7/26/54                        | 13.1                  | 7.7             | 6.0                 | 1.11           | 0               |                     |                         |                                   |                |                       |                 |                     |                |                 |                     |                         |                                   |         |      |      |      |      |      |     |      |



Table B3d (Continued)  
Intermountain Region (Continued)

| Soil Moisture Content            |         |         |         |         |             |         |          |           |           | Soil Moisture Content            |         |         |         |         |                      |         |          |           |           | Soil Moisture Content            |         |         |         |         |            |         |          |           |           |
|----------------------------------|---------|---------|---------|---------|-------------|---------|----------|-----------|-----------|----------------------------------|---------|---------|---------|---------|----------------------|---------|----------|-----------|-----------|----------------------------------|---------|---------|---------|---------|------------|---------|----------|-----------|-----------|
| Percent Weight Basis             |         |         |         |         | In. 1/4 in. |         |          |           |           | Cone Index                       |         |         |         |         | Percent Weight Basis |         |          |           |           | In. 1/4 in.                      |         |         |         |         | Cone Index |         |          |           |           |
| Sample Date                      | 0-1 in. | 1-2 in. | 2-3 in. | 3-4 in. | 4-5 in.     | 5-6 in. | 6-12 in. | 12-18 in. | 18-24 in. | Sample Date                      | 0-1 in. | 1-2 in. | 2-3 in. | 3-4 in. | 4-5 in.              | 5-6 in. | 6-12 in. | 12-18 in. | 18-24 in. | Sample Date                      | 0-1 in. | 1-2 in. | 2-3 in. | 3-4 in. | 4-5 in.    | 5-6 in. | 6-12 in. | 12-18 in. | 18-24 in. |
| Site 128, Millard Co., Utah      |         |         |         |         |             |         |          |           |           | Site 129, Millard Co., Utah      |         |         |         |         |                      |         |          |           |           | Site 130, Millard Co., Utah      |         |         |         |         |            |         |          |           |           |
| Unclassified SIL/SIL (ML)        |         |         |         |         |             |         |          |           |           | Unclassified L/L (CL-MU)         |         |         |         |         |                      |         |          |           |           | Unclassified SL/SIL (SC)         |         |         |         |         |            |         |          |           |           |
| 7/27/54                          | 13.0    | 12.6    | 15.9    | 1.34    | 0.94        | 300     | ----     |           |           | 7/27/54                          | 5.0     | 4.8     | 3.9     | 0.18    | 0.39                 | 300     | ----     |           |           | 7/27/54                          | 1.9     | 3.1     | 6.1     | 0.18    | 0.30       | 286     | ----     |           |           |
| 8/23/54                          | 11.9    | 14.6    | 19.2    | 0.59    | 1.09        | 300     | ----     |           |           | 8/23/54                          | 2.5     | 3.4     | 4.1     | 0.20    | 0.28                 | 300     | ----     |           |           | 8/23/54                          | 0.5     | 2.2     | 1.6     | 0.52    | 0.21       | 283     | ----     |           |           |
| 9/22/54                          | 11.3    | 13.6    | 13.0    | 0.65    | 1.02        | 300     | ----     |           |           | 9/22/54                          | 1.0     | 3.6     | 4.2     | 0.14    | 0.29                 | 300     | ----     |           |           | 9/22/54                          | 3.9     | 1.8     | 1.7     | 0.09    | 0.17       | 300     | ----     |           |           |
| 10/27/54                         | 11.0    | 13.8    | 17.1    | 0.97    | 1.04        | 300     | ----     |           |           | 10/27/54                         | 13.6    | 4.2     | 4.4     | 1.09    | 0.34                 | 300     | ----     |           |           | 10/27/54                         | 9.3     | 3.1     | 2.6     | 0.90    | 0.30       | 259     | ----     |           |           |
| 3/9/55                           | 15.0    | 16.2    | 13.9    | 1.12    | 1.22        | 300+    | NT       |           |           | 3/11/55                          | 14.9    | 12.5    | 8.1     | 1.20    | 1.02                 | 225     | NT       |           |           | 3/10/55                          | 10.1    | 9.3     | 6.5     | 0.98    | 0.91       | 167     | NT       |           |           |
| 4/7/55                           | 14.3    | 15.3    | 15.7    | 1.06    | 1.15        | 300+    | ----     |           |           | 4/7/55                           | 11.1    | 11.3    | 12.9    | 0.89    | 0.52                 | 225     | NT       |           |           | 4/7/55                           | 6.6     | 6.1     | 6.7     | 0.54    | 0.64       | 274     | ----     |           |           |
| 5/4/55                           | 10.3    | 11.8    | 11.2    | 0.30    | 1.02        | 300+    | ----     |           |           | 5/4/55                           | 8.9     | 11.8    | 10.2    | 0.72    | 0.96                 | 253     | ----     |           |           | 5/4/55                           | 3.3     | 5.1     | 5.3     | 0.32    | 0.49       | 300+    | ----     |           |           |
| 5/25/55                          | 10.8    | 14.5    | 11.2    | 0.30    | 1.09        | 300+    | ----     |           |           | 5/25/55                          | 16.0    | 8.1     | 8.8     | 1.02    | 0.66                 | 300+    | ----     |           |           | 5/25/55                          | 8.6     | 3.9     | 4.9     | 0.34    | 0.37       | 300+    | ----     |           |           |
| Site 131, Millard Co., Utah      |         |         |         |         |             |         |          |           |           | Site 132, White Pine Co., Nevada |         |         |         |         |                      |         |          |           |           | Site 133, White Pine Co., Nevada |         |         |         |         |            |         |          |           |           |
| Unclassified SL/SIL (SC)         |         |         |         |         |             |         |          |           |           | Unclassified L/L (CL)            |         |         |         |         |                      |         |          |           |           | Unclassified SIL/SIL (LC)        |         |         |         |         |            |         |          |           |           |
| 7/27/54                          | 1.9     | 3.1     | 6.1     | 0.18    | 0.30        | 286     | ----     |           |           | 7/27/54                          | 1.2     | 2.7     | 2.6     | 0.11    | 0.25                 | 300     | ----     |           |           | 7/27/54                          | 10.9    | 12.8    | 14.0    | 0.73    | 0.98       | 300     | ----     |           |           |
| 8/23/54                          | 0.5     | 2.2     | 1.6     | 0.52    | 0.21        | 283     | ----     |           |           | 8/23/54                          | 0.3     | 1.4     | 1.4     | 0.27    | 0.13                 | 300     | ----     |           |           | 7/27/54                          | 9.7     | 12.9    | 13.0    | 0.55    | 0.39       | 300     | NT       |           |           |
| 9/22/54                          | 3.9     | 1.8     | 1.7     | 0.09    | 0.17        | 300     | ----     |           |           | 9/22/54                          | 0.6     | 1.2     | 1.2     | 0.51    | 0.11                 | 285     | ----     |           |           | 8/23/54                          | 6.8     | 10.4    | 12.7    | 0.46    | 0.33       | 300     | ----     |           |           |
| 10/27/54                         | 9.3     | 3.1     | 2.6     | 0.90    | 0.30        | 259     | ----     |           |           | 10/27/54                         | 10.5    | 3.0     | 1.4     | 0.96    | 0.28                 | 282     | ----     |           |           | 9/21/54                          | 11.8    | 10.2    | 10.5    | 0.79    | 0.78       | 300     | ----     |           |           |
| 3/10/55                          | 10.1    | 9.3     | 6.5     | 0.98    | 0.91        | 167     | NT       |           |           | 3/10/55                          | 10.5    | 10.2    | 6.6     | 0.96    | 0.95                 | 213     | NT       |           |           | 10/27/54                         | 19.1    | 14.8    | 13.5    | 1.28    | 1.14       | 187     | ----     |           |           |
| 4/7/55                           | 6.6     | 6.1     | 6.7     | 0.54    | 0.64        | 274     | ----     |           |           | 4/7/55                           | 5.4     | 7.3     | 6.0     | 0.58    | 0.68                 | 273     | ----     |           |           | 4/7/55                           | 14.4    | 17.6    | 17.4    | 0.97    | 1.35       | 123     | 1.12     |           |           |
| 5/4/55                           | 3.3     | 5.1     | 5.3     | 0.32    | 0.49        | 300+    | ----     |           |           | 5/4/55                           | 4.5     | 4.8     | 4.4     | 0.41    | 0.45                 | 268     | ----     |           |           | 5/4/55                           | 22.8    | 26.3    | 17.1    | 1.53    | 1.25       | 151     | ----     |           |           |
| 5/25/55                          | 8.6     | 3.9     | 4.9     | 0.34    | 0.37        | 300+    | ----     |           |           | 5/25/55                          | 11.4    | 3.7     | 3.6     | 1.04    | 0.35                 | 284     | ----     |           |           | 5/25/55                          | 12.7    | 16.2    | 17.6    | 0.95    | 1.24       | 136     | NT       |           |           |
| Site 134, White Pine Co., Nevada |         |         |         |         |             |         |          |           |           | Site 135, Elko Co., Nevada       |         |         |         |         |                      |         |          |           |           | Site 136, Elko Co., Nevada       |         |         |         |         |            |         |          |           |           |
| Unclassified L/L (CL)            |         |         |         |         |             |         |          |           |           | Unclassified L/L (CL)            |         |         |         |         |                      |         |          |           |           | Unclassified L/L (CL)            |         |         |         |         |            |         |          |           |           |
| 7/28/54                          | 7.5     | 6.3     | 9.5     | 0.57    | 0.48        | 300     | ----     |           |           | 7/28/54                          | 12.4    | 8.1     | 12.6    | 1.00    | 0.64                 | 300     | ----     |           |           | 7/28/54                          | 4.8     | 9.4     | 9.5     | 0.40    | 0.81       | 300     | ----     |           |           |
| 8/24/54                          | 5.3     | 6.6     | 9.2     | 0.48    | 0.51        | 300     | ----     |           |           | 8/24/54                          | 3.0     | 7.4     | 5.6     | 0.24    | 0.59                 | 300     | ----     |           |           | 8/24/54                          | 2.7     | 9.3     | 9.1     | 0.39    | 0.80       | 300     | ----     |           |           |
| 9/21/54                          | 8.6     | 10.5    | 9.5     | 0.66    | 0.81        | 300     | ----     |           |           | 9/21/54                          | 3.3     | 6.6     | 7.1     | 0.27    | 0.52                 | 300     | ----     |           |           | 9/21/54                          | 3.4     | 7.1     | 7.3     | 0.28    | 0.61       | 300     | ----     |           |           |
| 10/27/54                         | 16.5    | 9.3     | 9.0     | 1.26    | 0.71        | 300     | ----     |           |           | 10/26/54                         | 7.3     | 6.3     | 7.5     | 0.59    | 0.50                 | 300     | ----     |           |           | 10/26/54                         | 7.0     | 6.8     | 8.6     | 0.58    | 0.59       | 300     | ----     |           |           |
| 4/7/55                           | 10.1    | 24.8    | 21.2    | 1.53    | 1.96        | 125     | NT       |           |           | 4/7/55                           | 14.3    | 15.3    | 14.2    | 1.16    | 1.21                 | 222     | NT       |           |           | 4/7/55                           | 24.7    | 22.0    | 10.2    | 2.03    | 1.90       | 141     | 0.28+    |           |           |
| 5/4/55                           | 22.6    | 24.3    | 21.4    | 1.72    | 1.87        | 144     | 0.58     |           |           | 5/5/55                           | 11.9    | 15.2    | 13.7    | 0.96    | 1.20                 | 251     | NT       |           |           | 4/3/55                           | 14.5    | 16.5    | 13.4    | 1.19    | 1.43       | 248     | ----     |           |           |
| 5/25/55                          | 21.3    | 19.7    | 18.7    | 1.62    | 1.51        | 153     | ----     |           |           | 5/25/55                          | 13.0    | 12.8    | 13.1    | 1.05    | 1.01                 | 300     | ----     |           |           | 5/5/55                           | 9.9     | 13.4    | 16.2    | 0.81    | 1.16       | 300     | ----     |           |           |
| Site 137, Elko Co., Nevada       |         |         |         |         |             |         |          |           |           | Site 138, Elko Co., Nevada       |         |         |         |         |                      |         |          |           |           | Site 139, Elko Co., Nevada       |         |         |         |         |            |         |          |           |           |
| Unclassified L/L (CL)            |         |         |         |         |             |         |          |           |           | Unclassified L/L (CL)            |         |         |         |         |                      |         |          |           |           | Unclassified SIL/SIL (SC)        |         |         |         |         |            |         |          |           |           |
| 7/28/54                          | 4.8     | 9.4     | 9.5     | 0.40    | 0.81        | 300     | ----     |           |           | 7/28/54                          | 3.9     | 10.3    | 11.5    | 0.31    | 0.91                 | 300     | ----     |           |           | 7/28/54                          | 2.9     | 6.4     | 5.3     | 0.25    | 0.58       | 300     | ----     |           |           |
| 8/24/54                          | 2.7     | 9.3     | 9.1     | 0.39    | 0.80        | 300     | ----     |           |           | 8/24/54                          | 4.7     | 11.0    | 16.4    | 0.37    | 0.98                 | 300     | ----     |           |           | 8/24/54                          | 2.0     | 4.5     | 5.0     | 0.18    | 0.41       | 300     | ----     |           |           |
| 9/21/54                          | 3.4     | 7.1     | 7.3     | 0.28    | 0.61        | 300     | ----     |           |           | 9/21/54                          | 4.1     | 13.1    | 14.4    | 0.32    | 1.16                 | 300     | ----     |           |           | 9/21/54                          | 3.4     | 3.3     | 4.6     | 0.30    | 0.30       | 300     | ----     |           |           |
| 10/26/54                         | 7.0     | 6.8     | 8.6     | 0.58    | 0.59        | 300     | ----     |           |           | 10/26/54                         | 8.9     | 13.1    | 16.7    | 0.70    | 1.16                 | 300     | ----     |           |           | 10/26/54                         | 4.2     | 5.0     | 5.5     | 0.37    | 0.45       | 300     | ----     |           |           |
| 3/10/55                          | 24.7    | 22.0    | 10.2    | 2.03    | 1.90        | 141     | 0.28+    |           |           | 3/10/55                          | 30.4    | 21.5    | 18.8    | 2.41    | 1.94                 | 231     | 0.20+    |           |           | 3/11/55                          | 11.5    | 11.2    | 9.1     | 1.02    | 1.01       | 218     | NT       |           |           |
| 4/3/55                           | 14.5    | 16.5    | 13.4    | 1.19    | 1.43        | 248     | ----     |           |           | 4/3/55                           | 12.9    | 11.8    | 11.4    | 1.02    | 1.05                 | 300     | NT       |           |           | 4/3/55                           | 9.6     | 11.4    | 10.7    | 0.84    | 1.03       | 135     | ----     |           |           |
| 5/5/55                           | 9.9     | 13.4    | 16.2    | 0.81    | 1.16        | 300     | ----     |           |           | 5/5/55                           | 8.9     | 19.8    | 21.2    | 0.70    | 1.76                 | 300     | ----     |           |           | 5/5/55                           | 10.7    | 10.7    | 11.0    | 0.94    | 0.92       | 207     | ----     |           |           |
| 5/25/55                          | 12.2    | 13.3    | 14.5    | 1.00    | 1.15        | 300     | ----     |           |           | 5/25/55                          | 13.6    | 15.0    | 22.3    | 1.08    | 1.33                 | 300     | ----     |           |           | 5/25/55                          | 10.7    | 10.1    | 11.0    | 0.94    | 0.92       | 207     | ----     |           |           |
| Site 140, Elko Co., Nevada       |         |         |         |         |             |         |          |           |           | Site 141, Tooele Co., Utah       |         |         |         |         |                      |         |          |           |           | Site 142, Tooele Co., Utah       |         |         |         |         |            |         |          |           |           |
| Unclassified SIL/L (ML)          |         |         |         |         |             |         |          |           |           | Saltair SIL/CL (CL)              |         |         |         |         |                      |         |          |           |           | Saltair SIL/CL (CL)              |         |         |         |         |            |         |          |           |           |
| 7/28/54                          | 4.1     | 6.2     | 2.8     | 0.36    | 0.64        | 300     | ----     |           |           | 7/29/54                          | 27.2    | 25.7    | 27.3    | 2.32    | 2.36                 | 269     | ----     |           |           | 7/28/54                          | 2.9     | 6.4     | 5.3     | 0.25    | 0.58       | 300     | ----     |           |           |
| 8/24/54                          | 2.8     | 5.6     | 5.1     | 0.25    | 0.55        | 700     | ----     |           |           | 8/24/54                          | 21.5    | 26.3    | 20.4    | 1.83    | 2.41                 | 272     | ----     |           |           | 8/24/54                          | 2.0     | 4.5     | 5.0     | 0.18    | 0.41       | 300     | ----     |           |           |
| 9/21/54                          | 2.6     | 4.6     | 3.9     | 0.23    | 0.45        | 300     | ----     |           |           | 9/21/54                          | 26.6    | 24.4    | 21.4    | 2.27    | 2.34                 | 300     | ----     |           |           | 9/21/54                          | 3.4     | 3.3     | 4.6     | 0.30    | 0.30       | 300     | ----     |           |           |
| 10/26/54                         | 4.1     | 4.9     | 5.1     | 0.36    | 0.48        | 300     | ----     |           |           | 10/26/54                         | 29.0    | 23.8    | 19.5    | 2.47    | 2.18                 | 246     | ----     |           |           | 10/26/54                         | 4.2     | 5.0     | 5.5     | 0.37    | 0.45       | 300     | ----     |           |           |
| 3/11/55                          | 16.1    | 11.2    | 9.5     | 1.43    | 1.10        | 251     | NT       |           |           | 3/11/55                          | 28.2    | 25.8    | 27.1    | 2.40    | 2.37                 | 248     | NT       |           |           | 3/11/55                          | 11.5    | 11.2    | 9.1     | 1.02    | 1.01       | 218     | NT       |           |           |
| 4/3/55                           | 9.6     | 10.1    | 5.1     | 0.85    | 0.99        | 300     | NT       |           |           | 4/3/55                           | 26.4    | 24.9    | 29.1    | 2.25    | 2.29                 | 300     | 0.55     |           |           | 4/3/55                           | 9.6     | 11.4    | 10.7    | 0.84    | 1.03       | 135     | ----     |           |           |
| 5/5/55                           | 8.1     | 9.5     | 10.4    | 0.72    | 0.93        | 500     | ----     |           |           | 5/5/55                           | 24.6    | 28.8    | 28.9    | 2.10    | 2.64                 | 300+    | ----     |           |           | 5/5/55                           | 10.7    | 10.1    | 11.0    | 0.94    | 0.92       | 207     | ----     |           |           |
| 5/26/55                          | 3.4     | 8.5     | 8.4     | 0.75    | 0.83        | 300+    | ----     |           |           | 5/26/55                          | 30.7    | 20.3    | 26.9    | 2.62    | 1.86                 | 300     | NT       |           |           | 5/26/55                          | 10.7    | 10.1    | 11.0    | 0.94    | 0.92       | 207     | ----     |           |           |

(Continued)

Note: Nt = no test.  
† Measurement of 0- 6-inch layer.



Table B3d (Concluded)  
Intermountain Region (Continued)

| Sample<br>Date                               | Soil Moisture Content   |                          |                           |                         |                          |                           | Cone<br>Index | Remold-<br>ing<br>Index | Depth<br>to<br>Water<br>Table<br>in. | Sample<br>Date | Soil Moisture Content   |                          |                           |                         |                          |                           | Cone<br>Index | Remold-<br>ing<br>Index | Depth<br>to<br>Water<br>Table<br>in. |
|--|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|---------------|-------------------------|--------------------------------------|----------------|-------------------------|--------------------------|---------------------------|-------------------------|--------------------------|---------------------------|---------------|-------------------------|--------------------------------------|
|  | Percent Weight Basis    |                          | in./6 in.                 |                         |                          |                           |               |                         |                                      |                | Percent Weight Basis    |                          | in./6 in.                 |                         |                          |                           |               |                         |                                      |
|  | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth |               |                         |                                      |                | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth | 0- to<br>6-in.<br>Depth | 6- to<br>12-in.<br>Depth | 12- to<br>18-in.<br>Depth |               |                         |                                      |
| <u>Site 142, Tooele Co., Utah</u>            |                         |                          |                           |                         |                          |                           |               |                         |                                      |                |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| <u>Saltair SIL/CL (CL)</u>                   |                         |                          |                           |                         |                          |                           |               |                         |                                      |                |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 7/29/54                                      | 27.8                    | 29.5                     | 37.6                      | 2.35                    | 2.73                     | 300                       | ----          |                         |                                      | 7/29/54        | 36.1                    | 36.7                     | 39.1                      | 2.90                    | 2.95                     | 133                       | ----          |                         |                                      |
| 8/25/54                                      | 28.1                    | 26.4                     | 37.7                      | 2.38                    | 2.44                     | 300                       | ----          |                         |                                      | 8/25/54        | 27.5                    | -----                    | -----                     | 2.44                    | 2.21                     | 116                       | ----          |                         |                                      |
| 9/21/54                                      | 27.7                    | 27.9                     | 36.7                      | 2.34                    | 2.58                     | 300                       | ----          |                         |                                      | 9/20/54        | 31.0                    | 37.3                     | 33.1                      | 2.49                    | 3.00                     | 148                       | ----          |                         |                                      |
| 10/26/54                                     | 30.6                    | 27.6                     | 35.4                      | 2.59                    | 2.55                     | 300                       | ----          |                         |                                      | 10/26/54       | 34.4                    | 26.7                     | 36.6                      | 2.77                    | 2.15                     | 112                       | ----          | 0                       |                                      |
| 3/11/55                                      | 31.2                    | 27.8                     | 37.5                      | 2.64                    | 2.57                     | 270                       | NT            |                         |                                      | 3/11/55        | Flooded                 |                          |                           |                         |                          |                           |               |                         |                                      |
| 4/8/55                                       | 28.7                    | 27.7                     | 39.5                      | 2.43                    | 2.56                     | 300                       | ----          |                         |                                      | 4/8/55         | 39.2                    | 34.6                     | 40.1                      | 3.15                    | 2.78                     | 134                       | ----          | 17                      |                                      |
| 5/5/55                                       | 29.6                    | 27.1                     | 37.1                      | 2.50                    | 2.50                     | 232                       | ----          |                         |                                      | 5/5/55         | 36.2                    | 39.5                     | 42.7                      | 2.91                    | 3.18                     | 130                       | ----          | 20                      |                                      |
| 5/26/55                                      | 30.7                    | 22.7                     | 39.0                      | 2.60                    | 2.10                     | 269                       | NT            |                         |                                      | 5/26/55        | 35.1                    | 33.3                     | 41.8                      | 2.82                    | 3.08                     | 139                       | 0.55          |                         |                                      |
| <u>Site 144, Tooele Co., Utah</u>            |                         |                          |                           |                         |                          |                           |               |                         |                                      |                |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| <u>Saltair SIL/SIL (CL)</u>                  |                         |                          |                           |                         |                          |                           |               |                         |                                      |                |                         |                          |                           |                         |                          |                           |               |                         |                                      |
| 7/29/54                                      | 38.5                    | 45.6                     | 46.5                      | 3.07                    | 3.56                     | 115                       | ----          |                         |                                      | 7/29/54        | 6.3                     | 11.6                     | 12.9                      | 0.57                    | 1.04                     | 300                       | ----          |                         |                                      |
| 8/25/54                                      | 25.0                    | 30.6                     | 37.3                      | 2.00                    | 2.39                     | 130                       | ----          |                         |                                      | 8/25/54        | 5.7                     | 8.0                      | 11.3                      | 0.52                    | 0.72                     | 300                       | ----          |                         |                                      |
| 9/20/54                                      | 36.9                    | 42.7                     | 44.9                      | 2.94                    | 3.33                     | 127                       | ----          |                         |                                      | 9/20/54        | 6.4                     | 8.6                      | 11.6                      | 0.58                    | 0.77                     | 300                       | ----          |                         |                                      |
| 10/26/54                                     | 29.3                    | 22.5                     | 20.5                      | 2.34                    | 1.76                     | 106                       | ----          |                         |                                      | 10/26/54       | 9.0                     | 7.9                      | 10.9                      | 0.82                    | 0.71                     | 300                       | ----          |                         |                                      |
| 3/11/55                                      | 41.0                    | 43.0                     | 41.4                      | 3.27                    | 3.35                     | 124                       | 0.44          | 12                      |                                      | 3/11/55        | 13.4                    | 13.4                     | 12.9                      | 1.21                    | 1.21                     | 300                       | NT            |                         |                                      |
| 4/8/55                                       | 41.6                    | 44.1                     | 45.8                      | 3.32                    | 3.44                     | 128                       | 0.38          | 25                      |                                      | 4/8/55         | 11.5                    | 12.5                     | 12.6                      | 1.04                    | 1.12                     | 300+                      | NT            |                         |                                      |
| 5/5/55                                       | 38.6                    | 44.1                     | 49.2                      | 3.08                    | 3.44                     | 125                       | ----          | 32                      |                                      | 5/5/55         | 6.6                     | 11.1                     | 11.8                      | 0.60                    | 1.00                     | 300+                      | ----          |                         |                                      |
| 5/26/55                                      | 39.0                    | 44.3                     | 51.1                      | 3.11                    | 3.46                     | 131                       | ----          |                         |                                      | 5/26/55        | 7.4                     | 11.3                     | 13.7                      | 0.67                    | 1.02                     | 300+                      | ----          |                         |                                      |
| Bulk density and tension values questionable |                         |                          |                           |                         |                          |                           |               |                         |                                      |                |                         |                          |                           |                         |                          |                           |               |                         |                                      |

Bulk density and tension values questionable

Note: NT - no test.



APPENDIX C: SOME OBSERVATIONS OF RUNOFF  
WITH CLASS I ACCRETIONS

1. As stated previously, the strength of the surface to 12-in. soil depth, the layer that determines for most soils whether or not a vehicle can move across them, is primarily affected by its moisture content, and knowledge of the moisture content to this depth is needed to determine trafficability of the soil. The amount of rain water that runs off the surface or percolates below the 12-in. depth is considered to have no effect on trafficability. Hence, all rainfall is effective and rainfall records alone cannot be used to determine how much water is retained in the surface to 12-in. layer from, say, a 24-hour storm. Storms of the same size may have totally different effects on the same soil area on different days because of a difference in the available storage space in the soil. For example, in a season of repeated rainfall, most of a one-inch storm may run off because the soil is nearly saturated; whereas in a dry season, that same soil might absorb the inch of moisture quite readily. It is obvious, then, that some means of classifying soil-moisture accretion in terms of rainfall and the capability of the soil to receive it is necessary. The accretion classification considers the amount of rainfall that occurred on a given day as well as the amount of available storage in the top 12 in. of the soil on the day preceding the storm. Accretions are called Class I when the amount of rainfall is less than the amount of available storage, and Class II when the amount of rainfall is equal to or greater than the amount of available storage.

2. The amount of rainfall below which accretion is not measurably affected is called the minimum-size storm, and the average minimum-size storm has been found to be 0.10 in.; rainfall less than this amount is ignored in the prediction method.

3. Runoff or percolation through the 12-in. depth is expected to accompany a Class II accretion because in this class rainfall exceeds available storage. Hence, with available storage the limiting factor, Class II prediction relations are derived as linear regressions of accretion against available storage. The amount of rainfall does not enter into the relations, and the amount of rain that runs off or percolates



through the 12-in. depth is not needed in these calculations.

4. With Class I accretions, rainfall is the limiting factor, and accretion relations are derived as linear regressions of accretion against rainfall amounts. It was assumed that runoff would be unimportant in most storms having Class I accretions, and several facts support this assumption. For one, storms of the size causing Class I accretions are generally small and would not cause runoff. The few large storms that give Class I accretions by necessity fall on dry soil. It is known that dry soil absorbs water at very high rates initially even though the soil has low infiltration rates when wet. For example, in August a loess soil near Vicksburg had infiltration rates (including depression storage) of over 4 in. per hour for the first ten minutes, and an infiltration rate of over 2 in. during the first hour of artificial wetting, although infiltration rates when the soil was wet were only 0.2 to 0.4 in. per hour.\* Hence, short, high intensity storms, and large storms occurring on dry soil can be absorbed with no runoff even though the soil has low infiltration rates when wet. A third condition reducing the importance of runoff as a source of error in Class I accretions is the inclusion of the effect of consistent runoff from certain sites within their accretion regressions. In this instance the regression slope is smaller, as the amount of accretion is less for a given amount of rain. A comparison of 20 bared sites with 84 vegetated sites showed that regression slopes averaged 0.07 less for the bared sites, giving 0.10 in. less soil-moisture accretion from a one-inch storm; this may be considered as runoff from the bared soil. Some level, bared plots with no litter, paired with forested plots failed to show this reduction in accretion. Interception was much less and accretion actually greater on the bared plots, thereby masking runoff from these soils.

5. However, runoff with some Class I accretions may cause error in prediction. A study of factors affecting Class I accretion slopes showed that the amount of available storage was a secondary factor determining regression slopes (paragraph 37 of the main report), thus indicating that

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\* K. G. Reinhart and R. E. Taylor, "Infiltration and available water storage capacity in the soil," Transactions, American Geophysical Union, vol 35, No. 5 (1954), pp 791-795.



available storage rather than rainfall may be limiting, and runoff occur with some Class I accretions.

6. Runoff was not measured on the early prediction development sites, so the assumption that runoff did not occur with most Class I accretions could not be verified. Later, runoff data along with soil-moisture and rainfall records were obtained for 12 sites at San Dimas, Calif., and 3 near Nacogdoches, Tex., which afforded an opportunity to check the incidence of runoff with Class I accretions. The San Dimas sites were lysimeters filled with a homogeneous soil material prepared from Vista-Fallbrook sandy loam in 1937. Seven of the lysimeters were confined, with concrete sides and bottom, and were 10 by 20 ft and 6 ft deep. The five "unconfined lysimeters" consisted of pits 17-1/2 ft on a side and 7 ft deep, filled with the prepared soil, and with no restriction against subsurface flow or drainage. These were calibrated for 9 years, and soil moisture and runoff were measured. Then in 1946, five species that grow in chaparral were planted in the unconfined and in five of the confined lysimeters including Coulter pine, chamise, Ceanothus, scrub oak, and buckwheat brush. One of the two remaining confined lysimeters was planted with grass and the other maintained bare. Data collected between 1951 and 1955 were used in this study. These lysimeters had low infiltration rates and high runoff; hence, they would provide a good test of runoff from Class I accretions. On an annual basis, two-thirds of the precipitation ran off of the bare plot, about one-third ran off of the pine plot, and lesser amounts from the other vegetated plots.

7. The three sites in east Texas were established in a pine forest with hardwood understory. Each site was located on a different soil type, Boswell loamy fine sand over a clay loam, Sawyer loam, and Huckabee fine sandy loam. The soils were undisturbed except for the insertion of a metal frame to catch runoff, and the installation of Fiberglas units to measure soil moisture. Data collected during 1953 were used in this study.

8. The amounts of rainfall, runoff, and available storage in both surface to 6-in. and surface to 12-in. layers were tabulated for each storm at the 15 sites. The storms were then grouped according to whether rainfall was less or more than the amount of available storage, considering the two layers separately. The percentage of storms with runoff over 0.10 in.



was determined for each of the groups for each site. Runoff less than 0.10 in. was considered insignificant in application to prediction.

9. The frequency of runoff when rainfall was less than available storage is summarized in table C1. Runoff from storms with an amount of

Table C1

Frequency of Runoff with Class I Accretions

| Site   | Per Cent of Storms Having<br>More Than 0.10-in. Runoff<br>with Available Storage Based on |                           |
|--|---|---------------------------|
|  | Surface to<br>12-in. Layer  | Surface to<br>6-in. Layer |
| <u>California Lysimeters</u>                                   |   |                           |
| c* Bare  | 59  | 31                        |
| c Pine ( <i>Pinus coulteri</i> )                               | 33  | 5                         |
| u** Pine ( <i>Pinus coulteri</i> )                             | 49  | 12                        |
| c Chamise ( <i>Adenostoma fasciculatum</i> )                   | 17  | 4                         |
| u Chamise ( <i>Adenostoma fasciculatum</i> )                   | 4   | 0                         |
| c Grass (Mixed species)  | 6   | 4                         |
| c Buckwheat brush ( <i>Eriogonum fasciculatum foliolosum</i> ) | 6   | 4                         |
| u Buckwheat brush ( <i>Eriogonum fasciculatum foliolosum</i> ) | 0   | 0                         |
| c Ceanothus ( <i>Ceanothus crassifolius</i> )                  | 5   | 0                         |
| u Ceanothus ( <i>Ceanothus crassifolius</i> )                  | 0   | 0                         |
| c Scrub oak ( <i>Quercus dumosa</i> )                          | 0   | 0                         |
| u Scrub oak ( <i>Quercus dumosa</i> )                          | 0   | 0                         |
| Weighted average   | 17  | 5                         |
| Total number of storms   | 364   | 249                       |
| <u>East Texas</u>  |   |                           |
| Boswell  | 0   | 0                         |
| Sawyer   | 0   | 0                         |
| Huckabee   | 0   | 0                         |
| Weighted average   | 0   | 0                         |
| Total number of storms   | 65  | 52                        |

\* c = confined lysimeters.

\*\* u = unconfined lysimeters.



water less than the amount of available storage in the surface to 12-in. layer corresponds to runoff with Class I accretions. Six per cent or less of the storms occurring at eight of the California sites caused appreciable runoff, and no storms at the Texas sites caused runoff in this category. The bare, the two young pine, and one of the chamise sites had runoff frequently, even though there was sufficient storage to retain the rainfall, indicating very low infiltration rates under conditions of little or no litter. Except for these relatively bare sites, runoff seldom occurred with Class I accretions, thus supporting the original assumption for accretion classification.

10. The selection of the 12-in. depth was made solely because it is the critical depth for trafficability. A different depth may be more suitable for determining the amount of available storage that governs runoff. Using the 12-in. depth, it is possible for the soil surface to be quite wet but the 6- to 12-in. layer very dry, thus providing enough available storage to put an accretion into Class I, even though the wet surface is conducive to runoff which is expected in Class II accretions. Therefore it was decided to determine the frequency of runoff when rainfall was less than available storage in the surface to 6-in. layer; these data are also shown in table C1. The number of storms was reduced from 364 to 249 because smaller amounts of available storage were considered, and consequently smaller rainfalls. The frequency of runoff at the California sites was reduced from 17% to 5% when the calculation of available storage was changed from the 12- to 6-in. depth. A marked reduction occurred for those sites with small amounts of litter and the bare site. If the primary purpose of the accretion classification were separation of storms with runoff from those without, calculation of available storage to the 6-in. depth rather than the 12-in. depth would be better for the California lysimeter plots. However, the purpose of the accretion classification is to aid in predicting the amount of water in the 6- to 12-in. layer, wherein the soil strength affects trafficability. If the surface to 6-in. layer is used as a basis for accretion classification, then accretion must also be separately classified in the 6- to 12-in. layer. If this is done, allowance would then have to be made for water retained in the surface to 6-in. layer and for runoff (or storm intensity and infiltration rates would have



to be considered) before accretion could be classified or added to the 6- to 12-in. layer. Likewise, with the present accretion classifications, knowledge of storm intensity and infiltration are needed to determine accretion below the 12-in. depth. The present accretion classification based on the surface to 12-in. layer appears to be satisfactory for trafficability purposes at most sites.



## APPENDIX D: SOIL-MOISTURE VARIATION STUDY

1. The natural variability of soil-moisture content over an area limits the accuracy of a moisture prediction. Because little was known about the magnitude of moisture variation in the surface to 6-in. and the 6- to 12-in. layers, a study of this factor was made at 8 sites in six states by the Infiltration Project. These findings have been published as a separate paper,\* and this appendix presents essentially the same information; it is included to emphasize the importance to prediction of the variation in soil characteristics.

2. Moisture content will, of course, vary by soil depth, but this can be taken care of by separate determinations for each soil horizon or layer. The variation to be considered is that which occurs at any one time within one layer of an area apparently homogeneous as to soil and vegetation.

3. Soil variation, in such properties as texture, structure, organic content, and bulk density, will exist over any area mapped as one soil type. A certain heterogeneity within a mapped soil type may be expected, according to the Soil Survey Manual:\*\*

"The soil type is a subdivision of the soil series based on the texture of the surface soil.... It is the lowest and most nearly homogeneous unit in the natural system of classification. A soil type may include defined variations in such characteristics as slope, stoniness, degree of erosion, or depth to bedrock or layers of unconformable material."

4. The effect of vegetation on soil-moisture variation is least when the area is fully occupied with cover of uniform composition and greatest when the soil is only partially covered--as with young row-crops or scattered bunch-grasses or shrubs. Variation in vegetation causes differences in interception, stemflow, and transpiration, which affect soil-moisture content and its variation.

5. Uneven penetration of rainfall in the soil profile probably

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\* H. W. Lull and K. G. Reinhart, Soil-moisture Measurement, Occasional Paper 140 (New Orleans, La., Southern Forest Experiment Station, 1955).

\*\* U. S. Department of Agriculture, Soil Survey Manual, Handbook 18 (Government Printing Office, 1951), 503 pp.



accounts for a major part of soil-moisture variation; variation may be caused by differences in infiltration rates, runoff from parts of the area or runoff from adjacent areas, and gain or loss of water at a given point by subsurface flow. Variation in distribution of rainfall over an area also results in variation in soil-moisture content at any given soil depth.

6. The Vicksburg Project studied the amount of variation in soil-moisture content of the surface to 6- and the 6- to 12-in. layers on areas of apparently homogeneous soil and cover in Mississippi, Louisiana, Arkansas, New Mexico, Colorado, and Wisconsin. Each sampling area contained 40,000 sq ft (about 0.92 acre), usually as a 200-ft square. Each area was divided into four blocks, 100 ft square, each block into four plots, 50 ft square, and each plot into 25 sampling squares, 10 ft square. At weekly intervals, two blocks, two plots within each of these blocks, and two squares within each of these plots were randomly selected and gravimetrically sampled. From each selected square, one King-tube soil sample was obtained from the surface to 6-in. layer and one from the 6- to 12-in. layer--a total of 8 samples weekly from each layer. Individual samples averaged about 50 g, dry weight, of soil. At several of the areas, measurements were made for 10 to 16 weeks during the drier part of the year and again for a similar period in the wet season. The location of study areas, inclusive dates of sampling, and soil and vegetation characteristics are given in table D1.

7. For each week of sampling at each site and depth, the variance ( $s^2$ ) associated with any single sample, taken at random anywhere in the whole "acre," was computed from the individual mean squares (MS):

$$s^2 = \frac{2MS \text{ within plots} + MS \text{ between plots within blocks} + MS \text{ between blocks}}{4}$$

Standard deviations were derived from these variances.

8. The variance was also partitioned into components: between squares within plots ( $s_v^2$ ), between plots within blocks ( $s_p^2$ ), and between blocks ( $s_b^2$ ). Variances for each area were then averaged for the number of weeks in the study; results are shown in table D2.

9. One of the most striking features is the variation from site to site and sometimes from season to season within a site. The average



Table D1  
Soil-moisture Variation Site and Sampling Information

| Site Name and Location                        | Soil Texture       | Vegetation   | Season | Number of Weeks | Period Covered                |
|---|--------------------|--|--------|-----------------|-------------------------------|
| Mound<br>Madison Parish,<br>Louisiana         | Silty clay         | Herbaceous--well stocked   | Dry    | 12              | Aug 14 to Oct 29, 1953        |
|   |                    |  | Wet    | 12              | Jan 14 to Apr 1, 1954         |
| Durden<br>Warren County,<br>Mississippi       | Silt loam          | Herbaceous--well stocked   | Dry    | 12              | Aug 13 to Oct 28, 1953        |
|   |                    |  | Wet    | 12              | Jan 13 to Apr 1, 1954         |
| Radiation<br>Warren County,<br>Mississippi    | Silt loam          | Herbaceous--well stocked   | Dry    | 12              | Aug 13 to Oct 28, 1953        |
|   |                    |  | Wet    | 12              | Jan 13 to Apr 1, 1954         |
| Headquarters<br>Ashley County,<br>Arkansas    | Silt loam          | Forest--70-yr-old lob-<br>lolly pine   | Dry    | 12              | Sept 4 to Nov 20, 1953        |
|   |                    |  | Wet    | 12              | Dec 24, 1953, to Mar 12, 1954 |
| Pine Flat<br>Bernalillo County,<br>New Mexico | Silt loam          | Open forest--pinon pine,<br>oak brush, juniper,<br>perennial grasses, and<br>weeds | Dry    | 12              | Aug 28 to Nov 5, 1953         |
|   |                    |  | Wet    | 16              | Nov 9, 1953, to Apr 5, 1954   |
| Mesa<br>Mesa County,<br>Colorado              | Silt loam          | Mountain meadow--sage-<br>brush and herbaceous,<br>25 per cent bare                | Dry    | 10              | Aug 18 to Oct 19, 1953        |
| Escalante<br>Delta County,<br>Colorado        | Silty clay<br>loam | Desert--5 to 10 per cent<br>herbaceous, remainder<br>bare                          | Wet    | 10              | Dec 21, 1953, to Mar 1, 1954  |
| Sortek<br>Oneida County,<br>Wisconsin         | Silt loam          | Herbaceous--timothy<br>grass, well stocked   | Dry    | 12              | Aug 24 to Nov 16, 1953        |

Table D2  
Soil-moisture Variation at Eight Sites

| Site Name         | Season | 0- to 6-in. Soil Layer           |  |                                    |         |         | 6- to 12-in. Soil Layer          |  |                                    |         |         |
|-------------------|--------|----------------------------------|--|------------------------------------|---------|---------|----------------------------------|--|------------------------------------|---------|---------|
|                   |        | Mean<br>Moisture<br>Content, in. | Average<br>Standard<br>Deviation<br>(s), in. | Proportion of<br>Total Variance, % |         |         | Mean<br>Moisture<br>Content, in. | Average<br>Standard<br>Deviation<br>(s), in. | Proportion of<br>Total Variance, % |         |         |
|                   |        |                                  |  | $s_v^2$                            | $s_p^2$ | $s_t^2$ |                                  |  | $s_v^2$                            | $s_p^2$ | $s_t^2$ |
| Mound             | Dry    | 1.42                             | 0.09   | 78                                 | 22      | 0       | 1.64                             | 0.15   | 76                                 | 16      | 8       |
|                   | Wet    | 2.58                             | 0.20   | 87                                 | 0       | 13      | 2.60                             | 0.19   | 100                                | 0       | 0       |
| Durden            | Dry    | 1.47                             | 0.34   | 33                                 | 67      | 0       | 1.55                             | 0.29   | 43                                 | 57      | 0       |
|                   | Wet    | 2.39                             | 0.25   | 26                                 | 41      | 33      | 2.39                             | 0.14   | 37                                 | 37      | 26      |
| Radiation         | Dry    | 0.74                             | 0.13   | 94                                 | 0       | 6       | 1.02                             | 0.21   | 56                                 | 24      | 20      |
|                   | Wet    | 2.17                             | 0.15   | 76                                 | 0       | 24      | 2.31                             | 0.23   | 40                                 | 19      | 41      |
| Head-<br>quarters | Dry    | 0.80                             | 0.16   | 70                                 | 30      | 0       | 0.72                             | 0.16   | 89                                 | 11      | 0       |
|                   | Wet    | 2.10                             | 0.20   | 63                                 | 37      | 0       | 2.05                             | 0.15   | 50                                 | 32      | 18      |
| Pine Flat         | Dry    | 0.74                             | 0.14   | 58                                 | 5       | 37      | 0.90                             | 0.12   | 51                                 | 39      | 0       |
|                   | Wet    | 1.76                             | 0.20   | 51                                 | 27      | 22      | 1.56                             | 0.22   | 82                                 | 0       | 18      |
| Mesa              | Dry    | 0.84                             | 0.13   | 78                                 | 5       | 17      | 0.88                             | 0.15   | 72                                 | 0       | 28      |
| Escalante         | Wet    | 0.38                             | 0.46   | 67                                 | 11      | 22      | 0.88                             | 0.23   | 68                                 | 18      | 14      |
| Sortek            | Dry    | 1.56                             | 0.28   | 100                                | 0       | 0       | 1.53                             | 0.33   | 100                                | 0       | 0       |
| Mean              |        | ---                              | 0.23   | 68                                 | 19      | 13      | ---                              | 0.22   | 67                                 | 20      | 13      |



standard deviation (square root of the average variance) for the "acre" ranges from 0.09 in. (1.3% by weight) to 0.46 in. (5.8%) in the surface to 6-in. layer, and from 0.12 in. (1.4%) to 0.33 in. (4.1%) in the 6- to 12-in. layer.

10. The magnitude of the variation encountered can in many cases be related to observed site factors. The Escalante site in western Colorado, with greatest variation at both depths, was characterized by scattered clumps of bunch-grasses, with the intervening areas bare. This would naturally lead to considerable variation.

11. The Mesa site in western Colorado also had unevenly distributed vegetation. However, moisture contents were uniformly low through most of the dry period, and variation was much less than at Escalante.

12. Vegetation at the Pine Flat site in New Mexico was mixed pinon pine, juniper, and herbaceous species. Here, variation was large in the wet season but not so large in the dry period.

13. Soil at Durden site in Mississippi, colluvial in origin, was quite variable. Moisture variation in the dry season was large. In the wet season, the variation was much less; the water table at this site was quite close to the surface and, as a result, all samples obtained during this period were more or less uniformly wet.

14. There was also a considerable difference among the sites in the proportion of the total variation that may be assigned to variation between samples within plots, between plots within blocks, and between blocks. The between-block and between-plot variances were probably a measure of the success achieved in laying out uniform plots. At various sites, Mound in Louisiana, Headquarters in Arkansas, and Sortek in Wisconsin, the percentage of total variation attributable to variation between blocks was small, ranging up to 18%. At the Radiation site in Mississippi, between-block variation was high during the wet period; this may be the result of slope at this site and possibly of gradation from one soil type to another. At Durden, about one-fourth mile from the Radiation site, variation between blocks during the wet period (as compared to total variation) was much greater than during the dry period. It is likely that slight differences in elevation of the blocks affected distance from water table of the samples secured and resulted in this larger block variation.



15. At four sites, data were collected in the dry season and again in the wet season. At two of these, Mound and Pine Flat, variation for both depths was much larger in the wet season. For the Radiation site, variation for each layer was about the same in both seasons. At Durden, probably because of the water-table influence, variation in the wet period was less than under dry conditions.

16. The variances and standard deviations so far considered give a measure of the reliability of a single soil-moisture sample in determining the true weekly mean. The actual means determined from 8 samples are of course more reliable. The hypothetical standard deviation of each weekly mean can be determined by dividing the standard deviation by 2.8, the square root of the number of samples. The result will vary somewhat from the true value because the 8 samples were not completely randomized. Thus, if the standard deviation is 0.23 in., the standard deviation of the weekly mean is only 0.08 in.

17. Sampling in this study was from the upper foot of soil only. In order to get a measure of the variation of deeper layers, analysis was made of duplicate samples taken from 6- by 6-ft plots used for calibration of Fiberglas units at the Mound, Durden, and Radiation sites. Standard deviations in percentage by weight of single gravimetric samples are given in table D3. For comparison, corresponding standard deviations of samples within the 50- by 50-ft plots of the variation study are given at the bottom of the table.

18. Variation in the several layers of the upper 4 ft of soil seems to be of the same general magnitude; standard deviations range from about 1 to somewhat over 2% by weight. At Mound, standard deviations were appreciably larger for the second foot, mostly because uneven wetting after summer storms caused several large differences between duplicate samples. Variation within the calibration plots are somewhat less than that within the 50- by 50-ft plots.

19. It might be pointed out that the standard deviation of the mean of 8 samples, about 0.08 in., was very close to the average deviation of about 0.09 in. between predicted and actual for the prediction development sites. A direct comparison is not possible, yet it indicates that the predictions for the prediction development sites may be as accurate as can



Table D3

Soil-moisture Variation by Depth: Standard Deviation (s)  
of Moisture Content of a Single Gravimetric Sample

| Soil<br>Depth, in.                         | Mound        |               | Durden       |               | Radiation    |               | All 3 Sites  |               |
|--|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
|  | Pairs<br>No. | s, %<br>by Wt | Pairs<br>No. | s, %<br>by Wt | Pairs<br>No. | s, %<br>by Wt | Pairs<br>No. | s, %<br>by Wt |
| <u>Within 6- by 6-ft Calibration Plots</u> |              |               |              |               |              |               |              |               |
| 0-3  | 72           | 2.0           | 31           | 1.9           | 12           | 1.4           | 115          | 1.9           |
| 3-6  | 72           | 1.7           | 32           | 1.1           | 12           | 1.1           | 116          | 1.5           |
| 6-9  | 71           | 2.0           | 31           | 1.3           | 12           | 1.4           | 114          | 1.7           |
| 9-12                                       | 70           | 2.1           | 31           | 1.4           | 12           | 1.3           | 113          | 1.8           |
| 12-15                                      | 42           | 2.2           | 31           | 1.6           | --           | ---           | 73           | 2.0           |
| 15-18                                      | 42           | 2.8           | 31           | 1.4           | --           | ---           | 73           | 2.3           |
| 12-18                                      | 27           | 2.4           | --           | ---           | 12           | 1.6           | 39           | 2.2           |
| 18-21                                      | 40           | 2.4           | 28           | 1.6           | --           | ---           | 68           | 2.1           |
| 21-24                                      | 41           | 2.4           | 29           | 2.2           | --           | ---           | 70           | 2.3           |
| 18-24                                      | 26           | 2.3           | --           | ---           | 12           | 0.8           | 38           | 1.9           |
| 28-32                                      | 58           | 1.9           | 26           | 1.2           | 12           | 1.1           | 96           | 1.7           |
| 40-44                                      | 51           | 1.6           | 24           | 1.3           | 12           | 1.4           | 87           | 1.5           |
| All depths                                 | 612          | 2.1           | 294          | 1.5           | 96           | 1.3           | 1002         | 1.9           |

Within 50- by 50-ft Plots of Variation Study

|                   |     |     |     |
|-------------------|-----|-----|-----|
| 0-6 (dry period)  | 1.0 | 2.6 | 1.6 |
| (wet period)      | 2.2 | 1.7 | 1.7 |
| 6-12 (dry period) | 1.7 | 2.7 | 1.8 |
| (wet period)      | 2.3 | 1.0 | 1.6 |

be expected, considering soil-moisture variation over small areas. This variation also accounts for some, but not all, of the deviation of predicted from measured reported for the survey sites. Therefore, there still is room for considerable improvement in average relations.



APPENDIX E: SOLAR RADIATION AND OTHER METEOROLOGICAL  
FACTORS AND SOIL-MOISTURE DEPLETION ON  
IOESS NEAR VICKSBURG, MISSISSIPPI

Objectives of Study

1. A study was established at the Waterways Experiment Station in February 1953 to investigate the relation of solar radiation and other meteorological factors to the rate of soil-moisture depletion. Previous analysis on a daily basis had failed to show correlation between soil drying in the surface to 12-in. layer and simple climatic factors, such as mean air temperature. However, the relation between water (soil moisture) loss and radiation, as well as other climatic factors, is quite definite from a causative point of view. Clarification of any such relation might make possible the estimation of moisture loss from some meteorological measure. Correlation with one or more climatic factors would aid in the selection of the transition dates for the seasonal depletion curves, as well as in the selection of the curves themselves.

2. In addition to the investigation of the relation between amount of radiation and soil-moisture depletion, the study had certain secondary objectives. These were: (1) to study the relation of other climatic factors, including evaporation measurements, to the rates of soil-moisture loss; (2) to check the utility of derived depletion curves compared to climatic factors in correlations with measured moisture losses; (3) to study several instruments for radiation measurement, including the total radiometer, the net radiometer, the pyrheliometer, and the actinometer, and to determine the advantages of each; and (4) to study the relation between amount of radiation and several types of climatic measurements, including air temperature, evaporation, and humidity.

Study Area and Instrumentation

Features of test area

3. The study was established in a level, open upland of about 4 acres at the Waterways Experiment Station in February 1953. The area had



a grass cover and was mowed periodically during the summer.

4. The soil was Memphis silt loam of loessial origin with fair to good internal drainage. A detailed description of soil characteristics is presented in Report 4, table C1, under the heading "Vicksburg, Warren Co., Radiation (all sites)"; climatic data are given in table E1 of the same report.

5. Vegetation on the site was typical of abandoned fields of this area and consisted primarily of weedy grasses, composites, and a few other plants. The most prominent species were hop clover (Trifolium agrarium), nut grass (Cyperus rotundus), sedge (Cyperus grayii), plantain (Plantago sp.), Johnson grass (Sorghum halepense), hogweed (Ambrosia artemisifolia), frostflower (Aster sp.), goldenrod (Solidago sp.), and Bermuda grass (Cynodon dactylon).

6. The test area, about 40 ft by 140 ft, was located on a level spot, not subject to shading by trees surrounding the area, and was fenced to keep vehicles out. An instrument shack was erected in one corner of the area to house the recording potentiometers for three of the radiation instruments, and the terminals from the three tiers of Fiberglas moisture units.

#### Soil-moisture measurements

7. Two tiers of Fiberglas units were installed in February 1953. One, called the herbaceous tier, was located near the center of the test area, fig. E1. The area adjacent to this tier, roughly 30 by 60 ft, was left unmowed and undisturbed for the duration of the study. A second tier of units was installed next to the herbaceous area but surrounded by a bared area 10 ft in radius which was maintained bare by chemicals and hand-weeding. A third tier of units was installed in March 1954 to the north of the bare area. The vegetation over this tier was mowed by hand whenever the meadow around the test area was mowed.

8. Four sampling plots were set out about each tier of units. The units were calibrated in the field by gravimetric sampling in the same manner used in other Vicksburg studies. Soil-moisture and temperature measurements were made five times a week at about 8 AM.

#### Climatic measurements

9. The weather instruments maintained at the test area included



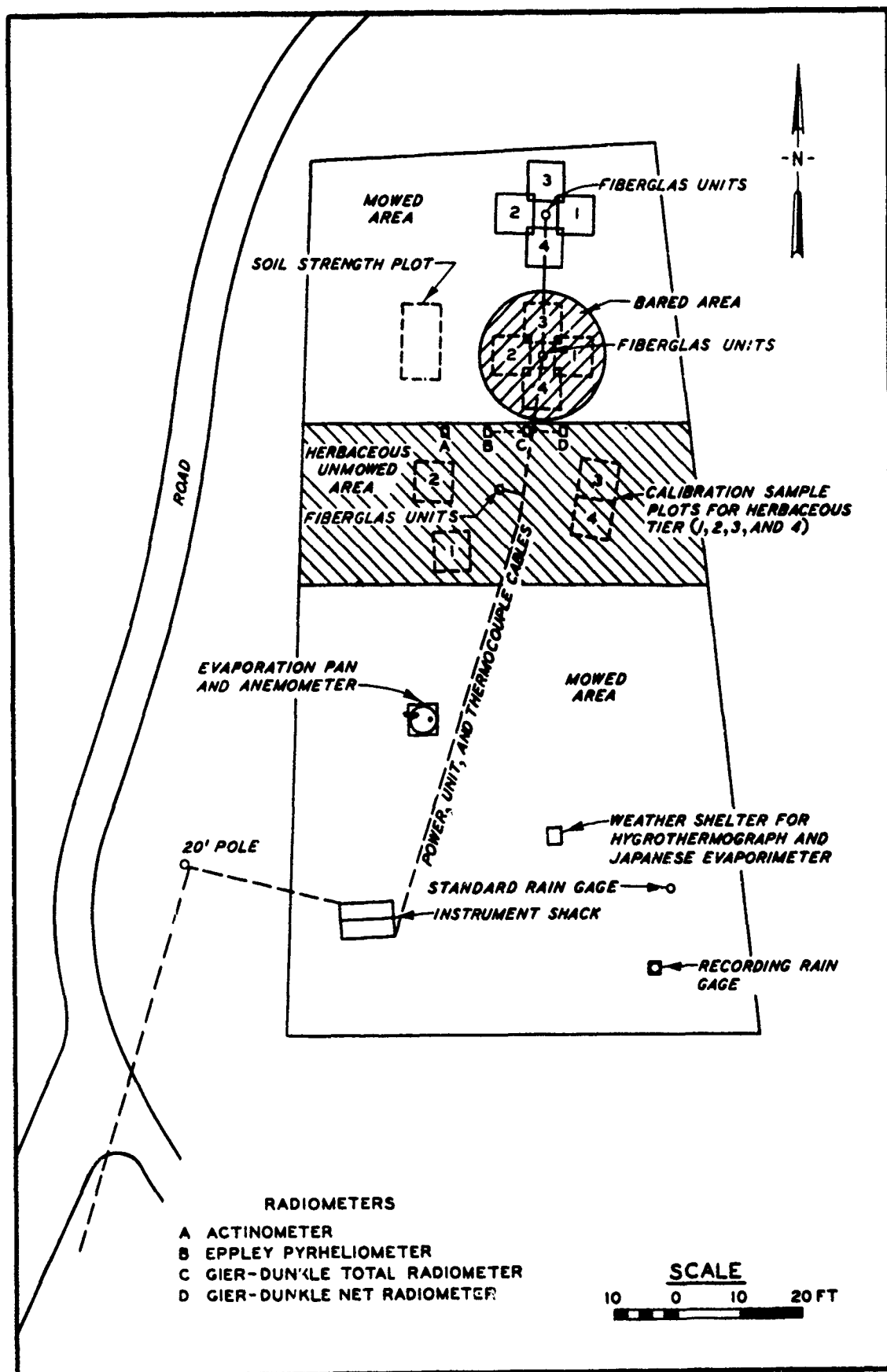


Fig. E1. Location of instruments and plots - solar radiation site



four types of radiometers, two evaporation instruments, two precipitation gages, an anemometer, and a hygrothermograph. The radiometers were mounted 5 ft above the ground on posts set between the herbaceous and bare areas (fig. E1). The other weather instruments were arranged between the herbaceous area and the instrument shack at different spots to minimize interference with each other.

10. Radiometers. Two of these instruments, the Gier-Dunkle net and total radiometers, were installed on February 28, 1953. The other two, the Eppley pyrliometer and the actinometer, were not received until December 1953, and were installed at that time. A brief description of each instrument follows:

- a. The net exchange radiometer (Gier-Dunkle) consists of a flat plate about  $4\frac{1}{2}$  in. square and  $\frac{3}{64}$  in. thick, made of three Bakelite plates sandwiched between two aluminum sheets. This plate is essentially a heat-flow meter; the center Bakelite plate holds thermopiles which are the sensing elements. These thermopiles are wired to a Weston recorder. The plate is mounted in a plane horizontal to the surface of the soil, and the heat transfer by radiation from the sky less the "back radiation" from the earth's surface is measured as the net exchange. A small blower is used to maintain equal thermoconductance for both surfaces.
- b. The total radiometer (Gier-Dunkle) is similar to the net exchange radiometer, save that a shield is placed on the underside so that only radiation received on the upper side is measured. The temperature of the plate is also measured, and these sensing elements are also wired into a Weston recorder. This measures the total amount of radiation received and takes no account of the radiation which is re-radiated from the surface of the soil. A small blower maintained air temperature around the thermopile.
- c. The Eppley pyrliometer consists of a thermopile mounted under receivers inside a clear glass, hemispherical bulb about 3 in. in diameter. The receivers are concentric, flat, metal rings exposed in the same plane. One ring is coated with magnesium oxide, the other with lampblack. The difference in temperature of these two rings produces a current across the thermopile, which is wired to a Weston recorder. The two receivers are similar in regard to absorption of long-wave radiation. This tends to minimize the effect of long-wave radiation so that the over-all response of the instrument is primarily to solar radiation.
- d. The actinometer (Instruments Corp.) is a self-contained recording instrument, again for the measurement of solar radiation. The sensing element consists of two strips of



the same metal. The top of one is painted black, and the top of the other is polished and protected by a nickel-plated strip. As the temperature changes between the two strips, a pen is moved on a clock-operated drum.

11. Atmospheric moisture and related measurements. The evaporation pan was the U. S. Weather Bureau type, copper, 4 ft in diameter and 10 in. deep, equipped with a stilling well. The pan was mounted on a wooden platform about 4 in. off the ground. The anemometer was mounted on the platform next to the pan, with the cups about 2 ft above the ground. The water level in the pan was measured with a hook gage five times a week, and the pan was refilled or partially emptied when necessary and a new level established. Concurrent readings were made of the anemometer.

12. A hygrothermograph and a Japanese evaporimeter were housed in a standard weather instrument shelter about 30 ft away from the evaporation pan. The hygrothermograph was clock-run with a seven-day chart. Temperature and humidity were checked periodically with a mercury thermometer and sling psychrometer which were kept in the weather shelter. The Japanese evaporimeter was a miniature well recorder, with water evaporating from the well through a wick and filter-paper disc. The well was refilled periodically when low and a new level established as was done for the standard evaporation pan. The height of water in the well was recorded on a clock-driven chart making one rotation a day. The chart was changed once a week or whenever the well was replenished. The unit was self-contained in a box about the size of a hygrothermograph.

13. Both standard and recording rain gages were maintained. The standard gage was measured on weekdays whenever precipitation occurred; week-end precipitation was accumulated. The recording gage was equipped with a 24-hr chart which was changed after each rain of 0.25 in. or at least once a week.

### Analyses

#### Period of record

14. The object of the study was to determine how closely solar radiation and other weather factors correlate with soil-moisture losses. In order that proper comparisons between the correlations can be made, all



factors under consideration must be measured on the same days or over the same periods. Differences in time of installation, instrument failure, breaks in the record occurring on week ends when the site was not visited, and periods of rainfall seriously reduced the number of days with parallel records for all factors. The Eppley pyrliometer was selected as standard for measurement of solar radiation because it is more widely used than the other three radiometers and was not subject to frequent shutdowns as were the Gier-Dunkle radiometers. Choice of the Eppley limited the usable record to 1954. The various factors in the analyses were usually related to measured soil-moisture loss. As weather factors are best related to evapotranspiration when soil moisture is plentiful\*,\*\*, the usable record was arbitrarily limited to those times when moisture content was greater than 50% of the range between field-maximum and -minimum values. Days on which rainfall occurred obviously could not be used, as moisture losses are considered, not gains.

15. It was further found after the first few analyses that solar radiation data showed less variability and better correlation with other factors if summations of the data for a period of days rather than daily values were used. This is shown clearly in the following comparison.

| Factor Correlated<br>to Moisture Loss | Correlation Coefficient (r) |            |
|---------------------------------------|-----------------------------|------------|
|                                       | One Day                     | Three Days |
| Solar radiation (Eppley)              | 0.196                       | 0.760      |
| Air temperature, mean                 | 0.220                       | 0.599      |

With the three-day period the magnitudes of the factors are much larger than for a single day. With larger values the relative amount of variation due to measurement techniques, natural variation in occurrence of the factor, or in other factors is apparently reduced, giving better correlations. The three-day sum was used in this study, which permitted bridging the two-day break in the moisture record over the week end; nevertheless, as a result of this break, three out of seven day-to-day comparisons per week were

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\* H. L. Penman, "Natural evaporation from open water, bare soil and grass," Proceedings, Royal Society of London, Series A (1948), 193:120-145.

\*\* C. W. Thornthwaite, "An approach toward a rational classification of climate," The Geographical Review, vol 38, No. 1 (January 1948), 38:55-94.



lost. Crabb,\* at East Lansing, Mich., and others also have found better trends with radiation data when analyzed as a moving sum or average for a period of days rather than as daily values.

16. With all these interruptions in the record, only 30 usable three-day periods were available. Twelve of these had overlapping records, having one or two days in common. The more frequent shutdowns of Gier-Dunkle radiometers reduced the number of comparisons among radiometers to 21.

17. The 30 three-day periods were distributed throughout the year, 14 in winter, 10 in spring, four in early summer, and two in late autumn. Because of dry soil conditions, despite intermittent rains, no usable periods occurred from early in June to mid-November. No comparisons by season were attempted with the few values available.

#### Data limitations

18. The small number of comparisons may be sufficient to show trends, but many more would be desirable to verify the correlations between the factors. The meager data point out the need for measurements on seven days a week over several years for similar studies.

19. Only moisture losses from the uncut herbaceous plot were used. The mowed plot record was only nine months long in 1954 and the rates of moisture loss from it were similar to those of the unmowed plot. This similarity was shown in the moisture-prediction studies reported in Report 4 of this series. The moisture measurements by resistance units on the bare plot were influenced by the chemicals used to kill weeds; therefore, this record was not considered reliable, and was not used.

20. Correlations between weather factors and moisture loss were desired to extend prediction for trafficability. For trafficability, moisture contents in the 6- to 12-in. soil layer can be critical, so correlations with moisture loss in this layer were desired. It was found, however, that moisture loss in this layer over a three-day period was small and did not give high correlations with changes in weather factors. Correlation was improved with inclusion of the surface to 6-in. layer as may

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\* George A. Crabb, Jr., Solar Radiation Investigations in Michigan, Technical Bulletin 222 (Michigan Agricultural Experiment Station, 1950), 153 pp.



be seen from the following comparison of correlation coefficients for the three layers.

| Layer<br>in. | Correlation Coefficient (r) |                 |                 |                 | Avg (3-day)<br>Moisture<br>Loss, in. |
|--------------|-----------------------------|-----------------|-----------------|-----------------|--------------------------------------|
|              |                             | Sum             | Mean            | Max             |                                      |
|              | <u>Langlies (Eppley)</u>    | <u>Air Temp</u> | <u>Air Temp</u> | <u>Air Temp</u> |                                      |
| 0-6          | 0.650                       | 0.605           | 0.565           | 0.479           | 0.184                                |
| 6-12         | 0.574                       | 0.292           | 0.292           | 0.342           | 0.033                                |
| 0-12         | 0.760                       | 0.636           | 0.599           | 0.535           | 0.217                                |

The effect must be similar to that previously mentioned with the one-day versus three-day measurement period. The 6- to 12-in. layer exhibited the poorest correlations but it also had the smallest amount of moisture loss. Consequently moisture losses in the entire surface to 12-in. layer were used throughout the analyses.

#### Compilation of data

21. Solar radiation data of the Eppley and Gier-Dunkle radiometers were recorded by potentiometers on a moving chart as a continuous trace. By means of a scale, values could be read at any point in terms of Langlies.\* The fluctuations of the trace were frequently great, due to passage of broken clouds, wind gusts, etc., making it difficult to sum the area under the trace even with a planimeter. The chart was subdivided into 20-minute intervals, and a mid-point assigned to the trace for this interval considering the area under the fluctuations by sight and simple computations. Three intervals were averaged for an hourly value, and the average hourly values were added over the three-day period. The temperature correction for the total radiometer was small and was not used. The actinometer charts were read by adding the number of squares in the chart divisions below the trace allowing for fluctuations. This instrument was not calibrated to Langlies.

22. The evaporation pan values represent the lowering of water height over the three-day period measured with a hook gage to the thousandths of an inch. The Japanese evaporimeter values are differences in chart scale divisions representing water level drop in this instrument. Anemometer values are in miles of air movement during the three-day period.

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\* A Langley is a gram-calorie per square centimeter.



23. Relative humidity was read from the chart at two-hour intervals from 10 AM to 4 PM, and averaged. The averages were summed for the three days as an expression of relative humidity. Daytime values only were used because humidity at night generally reaches almost 100 per cent regardless of the daytime value, and soil-moisture losses at night are nil. For vapor pressure deficit, temperatures were averaged for times corresponding to humidity measurements, a deficit determined from these averages for the day, and the three daily values summed.

24. The expression for air temperature mean was the daily mean, midpoint between the maximum and minimum temperature, summed for three days. The air temperature sum was the hourly temperature summed over three days. The air temperature maximum was the sum of the three daily maxima. The soil temperature expression was the sum of soil temperatures at the 1-1/2-, 4-1/2-, 7-1/2-, and 10-1/2-in. depths for the first and last day of each period. The omission of the intervening days was necessary because soil measurements were not made on week ends. Twelve of the 30 three-day periods covered week ends.

25. Soil-moisture losses were inches of water per given soil layer over the three-day period. As stated earlier, the values were obtained from the moisture record for the herbaceous site, and were also interpolated from the depletion curve derived for this site given in Report 4, and from the average depletion curve applicable to silt loam soils given in the main body of this report (Report 5).

#### Correlations

26. The analyses of these values were confined to single and multiple linear correlations to show any associated variation between dependent and independent variables. High correlation would indicate that one or a group of variables might be useful in extending estimation of a dependent variable needed in trafficability prediction, such as rate of moisture loss, into areas where the latter is unknown but where some knowledge of the other variables exists. High correlation does not imply a cause-and-effect relation, merely association.

27. Linear regressions were first computed between the various factors, individually, and soil-moisture loss to see which had highest correlation. Groups of factors were then tested by multiple regression to see



if correlation would be materially improved. Correlations were then made between moisture losses from derived or average depletion curves and measured losses for comparison with those by weather factors. Finally some of the instruments were tested against each other to examine their relative merits.

28. Values on which these analyses were based are presented in tables E1-E3.

### Results and Discussion

#### Relation of climatic factors to soil-moisture loss

29. Correlations of measured moisture loss with individual environmental factors. The association of individual weather or environmental factors with measured soil-moisture loss is expressed by the following correlation coefficients:

| <u>Factor</u>                 | <u>Correlation Coefficient (r)</u> |
|-------------------------------|------------------------------------|
| Soil temperature              | 0.791                              |
| Evaporation from pan          | 0.790                              |
| Solar radiation (Eppley)      | 0.760                              |
| Air temperature, sum          | 0.636                              |
| Air temperature, mean         | 0.599                              |
| Air temperature, maximum      | 0.535                              |
| Vapor pressure deficit        | 0.521                              |
| Evaporation from evaporimeter | 0.483                              |
| Relative humidity             | 0.214                              |
| Wind                          | 0.075                              |

30. It will be noted that soil temperature and evaporation pan losses are both closely correlated with measured moisture loss. These factors may be considered integrating expressions in that they not only reflect air temperature and solar radiation during the three-day period of measurement but also for some days preceding the period of measurement. The pan further reflects wind, humidity, and perhaps dew fall which may influence soil-moisture loss. Soil temperature influences the rate of evaporation, and of water movement through the soil, and into and through the roots. Hence, it is understandable that these factors have higher correlations with moisture loss than other directly causative and more



specific factors such as solar radiation or air temperature. Solar radiation is also highly associated with soil-moisture loss, but slightly less than soil temperature or evaporation pan losses. Air temperature has been widely used to estimate potential evapotranspiration, hence it is worth noting that the correlation coefficients for air temperature expressions are considerably lower than those for radiation. The air temperature sum agrees considerably better than the air temperature mean, which in turn is better than maximum air temperature. Vapor pressure deficit, which includes within it a measure of temperature as well as relative humidity, has a slightly lower correlation than air temperature itself. The Japanese evaporimeter losses show less correlation which is surprising as the standard evaporation pan correlation is so high. Relative humidity shows a very weak relation, and wind a negligible one. It should be remembered throughout that these associations, expressed by the correlation coefficients, refer to the measured soil-moisture loss from the surface to 12-in. depth only, and over a three-day period.

31. Correlations of combinations of factors with measured soil-moisture loss. Multiple regressions were next run to see if groups of factors would materially improve correlation over that from individual factors. The correlations obtained with moisture loss are listed below:

| <u>Factors Correlated<br/>to Moisture Loss</u> | <u>Multiple Correlation<br/>Coefficient (R)</u> |
|--|---|
| Soil temperature                               | 0.808   |
| Air temperature, mean                          |   |
| Evaporation pan losses                         | 0.798   |
| Air temperature, mean                          |   |
| Radiation                                      | 0.770   |
| Air temperature, mean                          |   |
| Soil temperature                               | 0.823   |
| Radiation                                      |   |
| Wind   |   |
| Humidity                                       |   |
| Soil temperature                               | 0.842   |
| Radiation                                      |   |
| Air temperature, mean                          |   |
| Wind   |   |
| Humidity                                       |   |

(Continued)



| <u>Factors Correlated<br/>to Moisture Loss</u> | <u>Multiple Correlation<br/>Coefficient (R)</u> |
|--|---|
| Soil temperature                               | 0.843   |
| Evaporation pan losses                         |   |
| Radiation                                      |   |
| Air temperature, mean                          |   |
| Wind   |   |
| Humidity                                       |   |
| Soil temperature                               | 0.831   |
| Evaporation pan losses                         |   |
| Radiation                                      |   |

32. Several interesting associations are indicated in these correlations. No great improvement in correlation is gained when each of the three best individual correlators with moisture loss are grouped with the air temperature mean. Air temperature does not contribute much in these combinations. When soil temperature and solar radiation are combined with other factors there is a marked improvement in correlation. In these combinations, evaporation pan values increase correlation more than wind and humidity, but not as much as air temperature plus wind and humidity. Evaporation cannot equally substitute for air temperature, wind, and humidity, and when the latter three are in combination with soil temperature and solar radiation, the addition of evaporation does not affect the correlation.

33. Contribution from various factors to moisture losses determined by multiple regressions. The relative contribution of various factors was also determined for the major environmental factors utilizing multiple regression techniques and determining the standard regression coefficients and their relative values.

| <u>Factor</u>          | <u>Correlation Coefficient of Simple Regressions (par. 29)<br/>Correlation Coefficient (r)</u> | <u>Relative Contribution from<br/>Standard Regression Coefficients in Multiple Regression</u> |  |
|------------------------|--|---|--|
|                        |  | <u>A<br/>Including Evap<br/>Pan Values</u>  | <u>B<br/>Without Evap<br/>Pan Values</u> |
| Soil temperature       | 0.791  | 28.5  | 15.2                                     |
| Evaporation pan losses | 0.790  | 28.0  | ---                                      |
| Radiation (Eppley)     | 0.760  | 19.0  | 8.4                                      |
| Relative humidity      | 0.214  | 8.0   | 1.0                                      |
| Wind                   | 0.075  | 5.0   | 2.9                                      |
| Mean air temperature   | 0.599  | 5.0   | 7.9                                      |



The preponderant influence of soil temperature and radiation on moisture loss again appears in the ranking of the standard regression coefficients, suggesting further that these factors are more suitable for extending the prediction system than are other factors.

Evaluation of moisture depletion curves

34. For purposes of extending trafficability forecasts into relatively unknown areas, correlations of environmental factors with depletion curves may be more useful than correlation of these factors with measured moisture losses. With some knowledge of the meteorology of a region, the proper depletion curves may be selected if a correlation of curves to climatic factors is known. The depletion curves show rates of moisture loss, depicting average losses for a given soil layer and season. The curves may be derived for a specific site or averaged from a group of sites. Both types of curves were used in deriving the following correlations.

| <u>Correlation with Depletion Curve</u>   | <u>Correlation Coefficient (r)</u> |
|---|------------------------------------|
| Radiation (Eppley) vs loss by average depletion curve   | 0.750                              |
| Radiation vs loss by specific depletion curve   | 0.718                              |
| Moisture loss by average depletion curve vs measured moisture loss  | 0.658                              |
| Moisture loss by specific depletion curve vs measured moisture loss   | 0.853                              |
| Moisture loss by specific depletion curve, radiation, soil temperature, and evaporation pan vs measured moisture loss | 0.891                              |

35. Moisture losses by depletion curves correlated well both with radiation values and measured moisture losses, indicating that climatic factors may be helpful in selecting curves. The specific depletion curve values correlate with measured moisture losses better than any single or combination of climatic factors tabulated in paragraphs 31 and 33, showing that the curves estimate moisture losses with some measure of success. Depletion curves were derived from data of previous years, whereas



meteorological and soil-moisture loss measurements were made later and on the same days. The correlation is improved with a combination of depletion curves and climatic factors indicating that the depletion curves can be improved if allowance is made for climatic conditions. At present, selection of curves is made only on the basis of soil properties.

#### Comparisons between instruments

36. An evaluation of radiometers was also made by correlations as shown below. Only 21 periods of measurement with parallel records for all radiometers were available.

| <u>Radiometer</u> | <u>Correlation Coefficient (r)</u> |                           |
|-------------------|------------------------------------|---------------------------|
|                   | <u>Dependent Variable</u>          |                           |
|                   | <u>Eppley</u>                      | <u>Soil-moisture Loss</u> |
| Eppley            |                                    | 0.722                     |
| Net exchange      | 0.968                              | 0.682                     |
| Total             | 0.961                              | 0.729                     |
| Actinometer       | 0.989                              | 0.721                     |

37. For correlations with the Eppley as the standard and with soil-moisture loss, all radiometers have equivalent results for purposes of this study. The net exchange and total radiometers were least desirable because of frequent shutdowns. The actinometer is considered adequate for the accuracy required in this type of study. The instrument costs the least, requires no power source, and is simple to operate. Also actinometer charts were much easier to read than those of the recording potentiometers.

38. The standard evaporation pan was superior to the Japanese evaporimeter, the former having a correlation coefficient of 0.790 with moisture loss whereas the latter had a coefficient of 0.483. The correlation between instruments was 0.685, much less than that between radiometers. The location of the Japanese evaporimeter inside the weather shelter, as well as the construction of the evaporating surface--a filter paper fed by a wick--probably accounts for its inferior results.

#### Concluding Statement

39. It will be noted from the tables of correlation coefficients, that in all cases radiation is closely correlated with soil-moisture loss, whether or not it is a direct cause thereof. This, of course, fits nicely



with the theoretical concept that evapotranspiration is primarily a result of the energy balance occurring on the surface of the earth, a concept which has been extended and utilized particularly by H. L. Penman,\* who includes net radiation as a major factor in his evapotranspiration formula. If measured radiation data were available on a wide scale, it would appear possible to make some use of it in extending the prediction system. Such data are, however, not widely collected.

40. The apparent close relation of pan evaporation to soil-moisture loss also suggests an opportunity for the extension of the prediction system to noncontact areas, utilizing this meteorological factor. Here again, data are restricted in distribution. Kohler,\*\* as well as others, are deriving techniques for estimating pan evaporation from various meteorological criteria, so it may be possible later to use this factor. However, his present equation requires knowledge of radiation, air temperature, dew-point and wind values, several of which are limited in availability.

41. Several lessons can be learned from this study. Among them is the fact that integrating factors, like soil temperature or evaporation, appear to be of more use in extending the prediction system than do simple factors such as mean air temperature.

42. Mean temperatures have been used extensively. In the future perhaps it will be possible to make more use of the sum of air temperature or of soil temperature, each of which shows a better correlation with moisture loss than do the means.

43. The finding that values determined from previously derived soil-moisture depletion curves correlate with measured moisture loss better than the concurrently measured meteorological factors, singly or in combination, indicates that the soil-moisture prediction method developed on this project has value, and may prove more accurate than others based primarily on meteorological considerations. The finding also points out that soil factors as well as meteorological ones must be considered when accounting for soil-moisture losses.

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\* Loc. cit.

\*\* Max A. Kohler, Computation of Evaporation and Evapotranspiration from Meteorological Measurements (U. S. Department of Commerce, Weather Bureau, 1957).



Table E1  
Soil-moisture Loss and Radiation Values from Radiation Site, 1954

| Date  | Radiation Measurements, Langlies |       |                  |       |                |       | Radiation Measurements Box Units Actinometer |       | Measured Soil-moisture Loss, in. 0- to 12-in. Layer |       |
|-------|----------------------------------|-------|------------------|-------|----------------|-------|--|-------|---|-------|
|       | Eppley Pyrheliometer             |       | Total Radiometer |       | Net Radiometer |       | Daily  | 3-day | Daily   | 3-day |
|       | Daily                            | 3-day | Daily            | 3-day | Daily          | 3-day |  |       |   |       |
| 1/4   | 177.3                            |       | 31.8             |       | 26             |       | 17   |       | -0.03*  |       |
| 1/5   | 303.9                            |       | 108.3            |       | 143            |       | 28   |       | 0.03  |       |
| 1/6   | 321.3                            | 802   | 192              | 332   | 156            | 325   | 27   | 72    | 0.04  | 0.04  |
| 1/7   | 311.7                            | 937   | 178.5            | 479   | 82             | 381   | 28   | 83    | 0.02  | 0.09  |
| 1/11  | 350.1                            |       | 214              |       | 139            |       | 30   |       | 0.12  |       |
| 1/12  | 191.7                            |       | 90.5             |       | 85.5           |       | 18   |       | 0.07  |       |
| 1/13  | 235.2                            | 777   | 216              | 520   | 136.5          | 361   | 20   | 68    | 0.01  | 0.20  |
| 1/22  | 70.4                             |       | 30.5             |       | 16             |       | 8  |       | 0.13  |       |
| 1/23  | 85.2                             |       | 54.5             |       | 14.5           |       | 6  |       | 0.00  |       |
| 1/24  | 189.9                            | 346   | 127              | 212   | 107.5          | 106   | 17   | 31    | 0.00  | 0.13  |
| 2/1   | 366.4                            |       | 241              |       | 189.5          |       | 34   |       | 0.07  |       |
| 2/1   | 370.2                            |       | 240.5            |       | 196            |       | 34   |       | 0.03  |       |
| 2/3   | 385.0                            | 1122  | 242.5            | 724   | 202            | 588   | 38   | 106   | 0.06  | 0.16  |
| 2/4   | 392.5                            | 1148  | 259.5            | 742   | 229.5          | 628   | 39   | 111   | 0.06  | 0.15  |
| 2/5   | 398.2                            |       | 275              |       | 240.5          |       | 38   |       | -----   |       |
| 2/6   | 374.2                            |       | 276.5            |       | 256            |       | 37   |       | -----   |       |
| 2/7   | 421.8                            | 1194  | 316.5            | 868   | 264            | 760   | 40   | 115   | 0.07  | 0.07  |
| 2/12  | 424.5                            |       |                  |       |                |       |  |       | -----   |       |
| 2/13  | 364.2                            |       |                  |       |                |       |  |       | -----   |       |
| 2/14  | 249.9                            | 1039  |                  |       |                |       |  |       | 0.09  | 0.09  |
| 2/20  | 411                              |       | 318.5            |       | 213            |       | 39   |       | 0.23  |       |
| 2/21  | 463.1                            |       | 354.5            |       | 265            |       | 39   |       | -----   |       |
| 2/22  | 416.7                            | 1291  | 309              | 982   | 263.5          | 742   | 42   | 120   | 0.17  | 0.40  |
| 3/5   | 423.7                            |       | 415              |       | 268.5          |       | 45   |       | -----   |       |
| 3/6   | 514.3                            |       | 467.5            |       | 289.5          |       | 52   |       | -----   |       |
| 3/7   | 538.9                            | 1477  | 478.5            | 1361  | 296.5          | 854   | 54   | 151   | 0.23  | 0.23  |
| 3/15  | 576.3                            |       | 407.5            |       | 319.5          |       | 57   |       | 0.04  |       |
| 3/16  | 523.8                            |       | 343              |       | 279.5          |       | 56   |       | 0.06  |       |
| 3/17  | 424.5                            | 1525  | 280              | 1030  | 198            | 798   | 46   | 159   | 0.02  | 0.12  |
| 3/19  | 479.7                            |       | 368              |       | 313            |       | 49   |       | -----   |       |
| 3/20  | 505.8                            |       | 393              |       | 279            |       | 58   |       | -----   |       |
| 3/21  | 479.1                            | 1465  | 378              | 1: 39 | 229            | 821   | 56   | 163   | 0.34  | 0.34  |
| 3/22  | 493.5                            |       |                  |       |                |       |  |       | 0.15  |       |
| 3/23  | 175.5                            |       |                  |       |                |       |  |       | 0.02  |       |
| 3/24  | 331.2                            | 1000  |                  |       |                |       |  |       | 0.04  | 0.21  |
| 4/5   | 382.8                            |       |                  |       |                |       |  |       | 0.12  |       |
| 4/6   | 594                              |       |                  |       |                |       |  |       | 0.12  |       |
| 4/7   | 471                              | 1448  |                  |       |                |       |  |       | 0.10  | 0.34  |
| 4/12  | 359.7                            |       |                  |       |                |       |  |       | 0.10  |       |
| 4/13  | 546.6                            |       |                  |       |                |       |  |       | 0.11  |       |
| 4/14  | 553.2                            | 1460  |                  |       |                |       |  |       | 0.15  | 0.36  |
| 4/16  | 365.1                            |       |                  |       |                |       |  |       | -----   |       |
| 4/17  | 676.5                            |       |                  |       |                |       |  |       | -----   |       |
| 4/18  | 660.9                            | 1702  |                  |       |                |       |  |       | 0.47  | 0.47  |
| 4/19  | 691.2                            |       | 621              |       | 430            |       | 68   |       | 0.18  |       |
| 4/20  | 659.7                            |       | 629.5            |       | 414            |       | 80   |       | 0.13  |       |
| 4/21  | 621.6                            | 1972  | 579              | 1830  | 401            | 1245  | 72   | 220   | 0.12  | 0.43  |
| 4/22  | 558.6                            | 1840  | 559              | 1768  | 386.5          | 1202  | 65   | 217   | 0.07  | 0.32  |
| 5/3   | 202.5                            |       | 500.5            |       | 104            |       | 18   |       | 0.25  |       |
| 5/4   | 726.9                            |       | 592              |       | 430            |       | 84   |       | 0.09  |       |
| 5/5   | 717.3                            | 1647  | 596              | 1286  | 482            | 1016  | 86   | 188   | 0.09  | 0.43  |
| 5/6   | 660                              | 2104  | 546              | 1734  | 449            | 1361  | 86   | 256   | 0.13  | 0.31  |
| 5/17  | 619.8                            |       | 678              |       | 419            |       | 67   |       | 0.10  |       |
| 5/18  | 390.6                            |       | 397              |       | 229.5          |       | 49   |       | 0.04  |       |
| 5/19  | 612                              | 1622  | 664              | 1739  | 456            | 1104  | 72   | 188   | 0.10  | 0.24  |
| 5/20  | 726.9                            | 1730  | 666              | 1727  | 511            | 1196  | 92   | 213   | 0.09  | 0.23  |
| 5/21  | 712.5                            |       | 610.5            |       | 446            |       | 85   |       | -----   |       |
| 5/22  | 699.9                            |       | 614              |       | 385            |       | 86   |       | -----   |       |
| 5/23  | 656.4                            | 2069  | 600.5            | 1825  | 427            | 1258  | 77   | 248   | 0.37  | 0.37  |
| 6/4   | 749.4                            |       |                  |       |                |       |  |       | -----   |       |
| 6/5   | 697.2                            |       |                  |       |                |       |  |       | -----   |       |
| 6/6   | 708.6                            | 2155  |                  |       |                |       |  |       | 0.37  | 0.37  |
| 11/19 | 119.4                            |       |                  |       |                |       |  |       | -----   |       |
| 11/20 | 357.6                            |       |                  |       |                |       |  |       | 0.05  | 0.05  |
| 11/21 | 347.4                            | 824   |                  |       |                |       |  |       | -----   |       |
| 12/3  | 306.6                            |       | 177.6            |       | 197.7          |       | 27   |       | -----   |       |
| 12/4  | 137.7                            |       | 15.6             |       | 137.1          |       | 13   |       | -----   |       |
| 12/5  | 200.7                            | 645   | 117.3            | 370   | 204.3          | 539   | 18   | 58    | 0.04  | 0.04  |
| 12/13 | 47.4                             |       | 45.6             |       | 4.5            |       | 9  |       | 0.07  |       |
| 12/14 | 311.1                            |       | 155.4            |       | 216.3          |       | 21   |       | 0.04  |       |
| 12/15 | 329.1                            | 688   | 142.8            | 253   | 182.1          | 403   | 27   | 57    | 0.06  | 0.17  |
| 12/16 | 308.1                            | 948   | 158.4            | 457   | 248.1          | 646   | 27   | 75    | -0.03*  | 0.07  |
| 12/17 | 142.2                            |       |                  |       |                |       |  |       | -----   |       |
| 12/18 | 193.2                            |       |                  |       |                |       |  |       | -----   |       |
| 12/19 | 331.5                            | 667   |                  |       |                |       |  |       | 0.07  | 0.07  |
| 12/20 | 303.9                            |       |                  |       |                |       |  |       | 0.01  |       |
| 12/21 | 317.1                            |       |                  |       |                |       |  |       | 0.00  |       |
| 12/22 | 291.6                            | 913   |                  |       |                |       |  |       | 0.00  | 0.01  |

\* Indicates gain in soil moisture as a result of continued accretion.



Table E2  
Air and Soil Temperature Values from Radiation Site, 1954

| Date  | Air Temperature, °F |           |       |           |       | Soil Temperature, °F |             |
|-------|---------------------|-----------|-------|-----------|-------|----------------------|-------------|
|       | Maximum             |           | Mean  |           | Sum*  | At 7-1/2-in.         | Sum†        |
|       | Daily               | 3-day Sum | Daily | 3-day Sum |       | Depth**              |             |
|       |                     |           |       |           | Daily | Daily Reading        | 3-day Value |
| 1/4   | 68                  |           | 50    |           | 1247  | 46                   |             |
| 1/5   | 63                  |           | 48    |           | 1201  | 48                   |             |
| 1/6   | 64                  | 195       | 48    | 146       | 1064  | 46                   | 362         |
| 1/7   | 71                  | 198       | 51    | 147       | 1123  | 44                   | 363         |
| 1/11  | 50                  |           | 39    |           | 905   | 46                   |             |
| 1/12  | 38                  |           | 33    |           | 795   | 44                   |             |
| 1/13  | 53                  | 141       | 32    | 114       | 856   | 42                   | 357         |
| 1/22  | 36                  |           | 34    |           | 877   | 49                   |             |
| 1/23  | 40                  |           | 36    |           | 877   | --                   |             |
| 1/24  | 66                  | 142       | 53    | 123       | 1302  | 48                   | 386         |
| 2/1   | 72                  |           | 52    |           | 1216  | 48                   |             |
| 2/2   | 72                  |           | 55    |           | 1251  | 49                   |             |
| 2/3   | 73                  | 217       | 55    | 162       | 1311  | 48                   | 373         |
| 2/4   | 72                  | 217       | 51    | 161       | 1179  | 48                   | 380         |
| 2/5   | 68                  |           | 50    |           | 1179  | 48                   |             |
| 2/6   | 70                  |           | 52    |           | 1218  | --                   |             |
| 2/7   | 45                  | 183       | 38    | 140       | 942   | 46                   | 362         |
| 2/12  | 57                  |           | 45    |           | 1056  | 51                   |             |
| 2/13  | 73                  |           | 54    |           | 1307  |                      |             |
| 2/14  | 79                  | 239       | 70    | 169       | 1646  | 56                   | 420         |
| 2/20  | 62                  |           | 55    |           | 1351  | 56                   |             |
| 2/21  | 74                  |           | 55    |           | 1306  | 52                   |             |
| 2/22  | 76                  | 212       | 58    | 168       | 1362  | 52                   | 426         |
| 3/5   | 52                  |           | 45    |           | 1062  | 47                   |             |
| 3/6   | 52                  |           | 45    |           | 1063  |                      |             |
| 3/7   | 66                  | 170       | 48    | 138       | 1117  | 50                   | 378         |
| 3/15  | 56                  |           | 45    |           | 1060  | 52                   |             |
| 3/16  | 60                  |           | 44    |           | 1078  | 49                   |             |
| 3/17  | 67                  | 183       | 51    | 140       | 1210  | 50                   | 402         |
| 3/19  | 80                  |           | 69    |           | 1631  | 56                   |             |
| 3/20  | 70                  |           | 58    |           | 1395  |                      |             |
| 3/21  | 64                  | 214       | 54    | 181       | 1298  |                      | 442         |
| 3/22  | 82                  |           | 65    |           | 1566  | 56                   |             |
| 3/23  | 78                  |           | 70    |           | 1682  | 58                   |             |
| 3/24  | 84                  | 244       | 77    | 212       | 1834  | 61                   | 467         |
| 4/5   | 84                  |           | 74    |           | 1769  | 64                   |             |
| 4/6   | 86                  |           | 75    |           | 1790  | 65                   |             |
| 4/7   | 88                  | 258       | 77    | 226       | 1829  | 66                   | 526         |
| 4/12  | 78                  |           | 69    |           | 1674  | 68                   |             |
| 4/13  | 86                  |           | 71    |           | 1737  | 67                   |             |
| 4/14  | 86                  | 250       | 74    | 214       | 1770  | 67                   | 539         |
| 4/16  | 68                  |           | 56    |           | 1449  | 67                   |             |
| 4/17  | 78                  |           | 59    |           | 1396  |                      |             |
| 4/18  | 81                  | 227       | 63    | 178       | 1541  |                      | 519         |
| 4/19  | 80                  |           | 64    |           | 1561  | 64                   |             |
| 4/20  | 83                  |           | 68    |           | 1616  | 65                   |             |
| 4/21  | 85                  | 248       | 68    | 200       | 1644  | 65                   | 521         |
| 4/22  | 85                  | 253       | 71    | 207       | 1682  | 68                   | 522         |
| 5/3   | 56                  |           | 50    |           | 1328  | 70                   |             |
| 5/4   | 66                  |           | 54    |           | 1272  | 63                   |             |
| 5/5   | 72                  | 194       | 58    | 162       | 1384  | 62                   | 529         |
| 5/6   | 78                  | 216       | 62    | 174       | 1496  | 64                   | 511         |
| 5/17  | 86                  |           | 70    |           | 1672  | 66                   |             |
| 5/18  | 80                  |           | 71    |           | 1677  | 67                   |             |
| 5/19  | 84                  | 250       | 73    | 214       | 1713  | 67                   | 532         |
| 5/20  | 72                  | 236       | 60    | 204       | 1510  | 68                   | 528         |
| 5/21  | 77                  |           | 60    |           | 1477  | 66                   |             |
| 5/22  | 83                  |           | 66    |           | 1576  |                      |             |
| 5/23  | 86                  | 246       | 74    | 200       | 1660  | 67                   | 528         |
| 6/4   | 80                  |           | 67    |           | 1594  | 72                   |             |
| 6/5   | 85                  |           | 68    |           | 1643  |                      |             |
| 6/6   | 90                  | 255       | 73    | 208       | 1767  | 72                   | 576         |
| 11/19 | 56                  |           | 50    |           | 1205  | 58                   |             |
| 11/20 | 67                  |           | 53    |           | 1222  |                      |             |
| 11/21 | 74                  | 197       | 54    | 157       | 1249  | 52                   | 430         |
| 12/3  | 68                  |           | 50    |           | 1111  | 52                   |             |
| 12/4  | 74                  |           | 57    |           | 1393  |                      |             |
| 12/5  | 76                  | 218       | 66    | 173       | 1532  |                      | 407         |
| 12/13 | 44                  |           | 37    |           | 1002  | 50                   |             |
| 12/14 | 58                  |           | 42    |           | 961   | 47                   |             |
| 12/15 | 61                  | 163       | 44    | 123       | 1037  | 48                   | 365         |
| 12/16 | 65                  | 184       | 45    | 131       | 1120  | 44                   | 369         |
| 12/17 | 59                  |           | 46    |           | 1192  | 48                   |             |
| 12/18 | 50                  |           | 42    |           | 994   |                      |             |
| 12/19 | 52                  | 161       | 39    | 127       | 908   |                      | 350         |
| 12/20 | 57                  |           | 40    |           | 909   | 42                   |             |
| 12/21 | 70                  |           | 49    |           | 1090  | 42                   |             |
| 12/22 | 70                  | 197       | 52    | 141       | 1206  | 44                   | 336         |

\* The sum of air temperature represents the sum of 24 hourly readings for each day of record.

\*\* Soil temperature is given for one depth as an indication of prevailing temperature conditions.

† The sum of soil temperature is the sum of temperature readings for the 1-1/2-, 4-1/2-, 7-1/2-, and 10-1/2-in. depths for the first and last days of the 3-day period.



Table E3  
Miscellaneous Climatic Values from Radiation Site, 1954

| Date  | Relative Humidity, % |           | Vapor Pressure Deficit mm Hg |           | Evaporimeter Loss (Jap.) Scale Div |             | Evaporation Pan Loss, in. |             | Wind, miles |             |
|-------|----------------------|-----------|------------------------------|-----------|------------------------------------|-------------|---------------------------|-------------|-------------|-------------|
|       | Daily Mean           | 3-day Sum | Daily Mean                   | 3-day Sum | 24-hr Total                        | 3-day Total | 24-hr Total               | 3-day Total | 24-hr Total | 3-day Total |
| 1/4   | 54                   |           | 6.9                          |           | 2.6                                |             | 0.013                     |             | 11          |             |
| 1/5   | 38                   |           | 7.4                          |           | 3.3                                |             | 0.088                     |             | 10.6        |             |
| 1/6   | 22                   | 114       | 10.4                         | 24.7      | 4.5                                | 10.4        | 0.095                     | 0.196       | 12.8        | 34.4        |
| 1/7   | 27                   | 87        | 6.9                          | 24.7      | 5.4                                | 13.2        | 0.081                     | 0.264       | 10.5        | 33.9        |
| 1/11  | 52                   |           | 3.2                          |           | 1.3                                |             |                           |             |             |             |
| 1/12  | 54                   |           | 2.4                          |           | 2.1                                |             |                           |             | 39          |             |
| 1/13  | 44                   | 150       | 3.7                          | 9.3       | 3.8                                | 7.2         | 0.141                     | 0.141       | 23.3        | 62.3        |
| 1/22  | 100                  |           | 0.0                          |           | 0.3                                |             |                           |             |             |             |
| 1/23  | 100                  |           | 0.0                          |           | 0.7                                |             |                           |             |             |             |
| 1/24  | 75                   | 275       | 3.6                          | 3.6       | 3.1                                | 4.1         | 0.066                     | 0.066       | 57.2        | 57.2        |
| 2/1   | 67                   |           | 4.9                          |           | 4.7                                |             | 0.101                     |             | 10.8        |             |
| 2/2   | 43                   |           | 9.5                          |           | 3.8                                |             | 0.112                     |             | 11.4        |             |
| 2/3   | 34                   | 144       | 11.2                         | 25.6      | 6.6                                | 15.1        | 0.150                     | 0.363       | 23.3        | 45.5        |
| 2/4   | 33                   | 110       | 10.4                         | 31.1      | 4.0                                | 14.4        | 0.118                     | 0.380       | 16.4        | 51.1        |
| 2/5   | 37                   |           | 10.6                         |           | 5.3                                |             |                           |             |             |             |
| 2/6   | 36                   |           | 4.9                          |           | 5.7                                |             |                           |             |             |             |
| 2/7   | 67                   | 140       | 2.7                          | 18.2      | 3.2                                | 14.2        | 0.344                     | 0.344       | 85.5        | 85.5        |
| 2/12  | 36                   |           | 6.5                          |           | 3.4                                |             |                           |             |             |             |
| 2/13  | 43                   |           | 8.6                          |           | 5.0                                |             |                           |             |             |             |
| 2/14  | 74                   | 153       | 5.4                          | 20.5      | 1.7                                | 10.1        | 0.291                     | 0.291       | 85.7        | 85.7        |
| 2/20  | 47                   |           | 7.0                          |           | 7.9                                |             | 0.157                     |             | 32.6        |             |
| 2/21  | 28                   |           | 14.0                         |           | 5.5                                |             |                           |             |             |             |
| 2/22  | 28                   | 103       | 15.9                         | 36.9      | 7.4                                | 20.8        | 0.283                     | 0.440       | 21.0        | 53.6        |
| 3/5   | 50                   |           | 4.4                          |           | 3.7                                |             |                           |             |             |             |
| 3/6   | 39                   |           | 7.7                          |           | 3.7                                |             |                           |             |             |             |
| 3/7   | 34                   | 123       | 8.7                          | 20.8      | 4.9                                | 12.3        | 0.397                     | 0.397       | 71.8        | 71.8        |
| 3/15  | 36                   |           | 6.6                          |           | 5.0                                |             | 0.179                     |             | 39.2        |             |
| 3/16  | 28                   |           | 9.0                          |           | 6.0                                |             | 0.161                     |             | 32.2        |             |
| 3/17  | 43                   | 107       | 7.3                          | 22.9      | 5.0                                | 16.0        | 0.128                     | 0.468       | 20.3        | 91.7        |
| 3/19  | 60                   |           | 9.4                          |           | 7.8                                |             |                           |             |             |             |
| 3/20  | 66                   |           | 6.1                          |           | 5.9                                |             |                           |             |             |             |
| 3/21  | 52                   | 178       | 5.7                          | 21.2      | 4.3                                | 18.0        | 0.613                     | 0.613       | 122.6       | 122.6       |
| 3/22  | 38                   |           | 15.6                         |           | 11.6                               |             | 0.232                     |             | 63          |             |
| 3/23  | 88                   |           | 4.0                          |           | 4.4                                |             | 0.072                     |             | 49          |             |
| 3/24  | 72                   | 198       | 5.9                          | 25.5      | 9.0                                | 25.0        | 0.202                     | 0.506       | 88.1        | 200.1       |
| 4/5   | 77                   |           | 7.3                          |           | 5.3                                |             | 0.168                     |             | 38.3        |             |
| 4/6   | 63                   |           | 9.8                          |           | 7.6                                |             | 0.242                     |             | 51          |             |
| 4/7   | 64                   | 204       | 10.0                         | 26.6      | 10.1                               | 23.0        | 0.206                     | 0.615       | 46.6        | 135.9       |
| 4/12  | 85                   |           | 3.2                          |           | 3.0                                |             | 0.134                     |             | 19.2        |             |
| 4/13  | 65                   |           | 9.8                          |           | 4.3                                |             | 0.164                     |             | 10.3        |             |
| 4/14  | 59                   | 209       | 14.6                         | 27.6      | 7.2                                | 14.5        | 0.215                     | 0.513       | 34          | 63.5        |
| 4/16  | 72                   |           | 3.1                          |           | 3.6                                |             |                           |             |             |             |
| 4/17  | 35                   |           | 13.7                         |           | 5.6                                |             |                           |             |             |             |
| 4/18  | 40                   | 147       | 14.5                         | 31.3      | 8.1                                | 17.3        | 0.569                     | 0.569       | 70.6        | 70.6        |
| 4/19  | 54                   |           | 10.1                         |           | 6.3                                |             | 0.209                     |             | 25.4        |             |
| 4/20  | 54                   |           | 11.1                         |           | 5.5                                |             | 0.220                     |             | 16.7        |             |
| 4/21  | 53                   | 161       | 11.6                         | 32.8      | 4.8                                | 16.6        | 0.184                     | 0.613       | 10.4        | 52.5        |
| 4/22  | 67                   | 174       | 9.8                          | 32.5      | 3.9                                | 14.2        | 0.174                     | 0.578       | 10.2        | 37.3        |
| 5/3   | 87                   |           | 1.8                          |           | 1.0                                |             | 0.084                     |             | 26.7        |             |
| 5/4   | 47                   |           | 8.1                          |           | 3.9                                |             | 0.189                     |             | 19.4        |             |
| 5/5   | 42                   | 176       | 9.7                          | 19.6      | 5.2                                | 10.1        | 0.214                     | 0.487       | 15.4        | 61.5        |
| 5/6   | 44                   | 133       | 12.0                         | 29.8      | 4.9                                | 14.0        | 0.189                     | 0.592       | 12.5        | 47.3        |
| 5/17  | 64                   |           | 9.6                          |           | 5.2                                |             | 0.212                     |             | 13.7        |             |
| 5/18  | 87                   |           | 3.9                          |           | 3.2                                |             | 0.120                     |             | 7.7         |             |
| 5/19  | 56                   | 207       | 12.8                         | 26.3      | 5.6                                | 14.0        | 0.252                     | 0.584       | 17.6        | 39.2        |
| 5/20  | 40                   | 183       | 11.5                         | 28.2      | 5.8                                | 14.6        | 0.268                     | 0.640       | 19.5        | 45.0        |
| 5/21  | 37                   |           | 14.5                         |           | 4.6                                |             |                           |             |             |             |
| 5/22  | 38                   |           | 18.1                         |           | 5.1                                |             |                           |             |             |             |
| 5/23  | 41                   | 116       | 14.7                         | 47.3      | 4.8                                | 14.5        | 0.653                     | 0.653       | 26.7        | 26.7        |
| 6/4   | 46                   |           | 13.1                         |           | 5.4                                |             |                           |             |             |             |
| 6/5   | 43                   |           | 14.8                         |           | 4.7                                |             |                           |             |             |             |
| 6/6   | 45                   | 134       | 18.0                         | 45.9      | 6.2                                | 16.3        | 0.762                     | 0.762       | 40.2        | 40.2        |
| 11/19 | 86                   |           | 1.6                          |           | 1.9                                |             |                           |             |             |             |
| 11/20 | 37                   |           | 9.7                          |           | 4.9                                |             |                           |             |             |             |
| 11/21 | 27                   | 150       | 14.0                         | 25.3      | 1.2                                | 8.0         | 0.175                     | 0.175       | 27.2        | 27.2        |
| 12/3  | 38                   |           | 5.2                          |           | 2.6                                |             |                           |             |             |             |
| 12/4  | 75                   |           | 4.3                          |           | 4.8                                |             |                           |             |             |             |
| 12/5  | 48                   | 161       | 10.3                         | 19.8      | 7.0                                | 14.4        | 0.242                     | 0.242       | 101.7       | 101.7       |
| 12/13 | 79                   |           | 2.0                          |           | 1.0                                |             | 0.013                     |             | 5.7         |             |
| 12/14 | 44                   |           | 5.4                          |           | 2.3                                |             | 0.065                     |             | 13.8        |             |
| 12/15 | 23                   | 146       | 8.9                          | 16.3      | 3.8                                | 7.1         | 0.078                     | 0.156       | 10.2        | 29.7        |
| 12/16 | 24                   | 91        | 10.2                         | 24.5      | 5.5                                | 11.6        | 0.012                     | 0.155       | 31.7        | 55.7        |
| 12/17 | 58                   |           | 4.4                          |           | 3.1                                |             |                           |             |             |             |
| 12/18 | 65                   |           | 2.7                          |           | 1.9                                |             |                           |             |             |             |
| 12/19 | 33                   | 156       | 5.6                          | 12.7      | 2.1                                | 7.1         | 0.141                     | 0.141       | 53.0        | 53.0        |
| 12/20 | 43                   |           | 4.9                          |           | 2.6                                |             | 0.043                     |             | 6.8         |             |
| 12/21 | 36                   |           | 9.8                          |           | 4.9                                |             | 0.081                     |             | 19.6        |             |
| 12/22 | 40                   | 119       | 9.2                          | 23.9      | 2.9                                | 10.4        | 0.067                     | 0.191       | 5.0         | 31.4        |



## APPENDIX F: A STUDY OF CULTIVATION AND SOIL PROPERTIES THAT AFFECT TRAFFICABILITY

### Purpose of Study

1. In order to test the effects of cultivation on wetting and drying of the soil, on bulk density, and on soil strength, a test site was established in February 1955 in a grassy area adjacent to the solar radiation study site at the Waterways Experiment Station.

### Test Treatments

2. Four treatments were tested in the study. One treatment, termed the "one-cultivation," consisted of plowing and harrowing once in the spring with no further cultivation. A second treatment, called the "frequent cultivation," consisted of plowing and harrowing, followed by four cultivations with a one-row cultivator and a drag, four to six weeks apart. The last cultivation was performed on August 5, 1955. The grasses and sedge grew back shortly after each cultivation. A third treatment, termed the "bare treatment," consisted of killing all vegetation at frequent intervals by chemicals; no cultivation was performed. The fourth treatment was "no cultivation," and served as a check. The check and cultivated plots were clipped four times during the spring and summer.

### Plot Layout and Sampling Plan

3. The four types of treatments were positioned at random in each of two blocks of four plots arranged as a row of eight plots. Each treated plot was 12 ft by 32 ft, with the sampling area 6 ft by 26 ft, leaving a 3-ft treated border area around each sampling area. A section 6 ft by 3 ft at each end of the sampling area was reserved for bulk-density sampling, leaving a 6- by 20-ft area for moisture and soil-strength sampling. The inner area was divided into 30 subplots, 2 ft square. Weekly gravimetric samples were taken from quadrants of three of the subplots selected at random. Subsequent samplings were taken at random from the remaining



subplots. By the tenth week, all subplots were sampled. The plots were then resampled, but care was taken to sample at a new quadrant in the subplot. Forty-eight sets of moisture samples were taken during the year, at the 0- to 6-, 6- to 12-, and 12- to 18-in. layers.

4. Soil-strength measurements were made with the cone penetrometer and remolding equipment in conjunction with moisture sampling when the soil was moist during spring and early summer, and again during the following winter after the soil was again wet. On nine dates, cone penetrometer measurements were made in duplicate at each of two subplots for every plot. On five dates, remolding index measurements were attempted on two or three samples from each plot of one block but firm soil conditions prevented complete sampling on any date. Blocks were alternated each date for remolding tests.

5. Bulk density was determined on cores from each 3-in. layer in the surface foot of soil. Both ends of every plot were sampled on five dates from February to November. Altogether, 320 bulk-density samples were tested. All holes made during sampling were refilled with soil from outside the study area.

6. Fiberglas soil-moisture units established in the nearby radiation site were read on all sampling days during the cultivation study. Moisture predictions were made using relations derived previously from radiation site data. These were compared to the actual record obtained by the units in 1955 and to the cultivation-study moisture record.

#### Vegetation on Plots

7. The vegetation contained vigorous perennials, such as nut grass (*Cyperus* sp.) and Johnson grass (*Sorghum halepense*). In consequence, regrowth was quite rapid after treatment. Cultivation appeared to stimulate growth but the frequent cultivation gradually reduced the cover. Measurements of vegetation growth were taken late in August. The check (natural) and one-cultivation plots had been clipped about a month before the measurement and the frequently cultivated area had been cultivated about three weeks before. By late August, the grass on the one-cultivation plots had grown to about a foot in height while that on the check plots had grown



only six inches in the month period. The frequently cultivated plots had a sparse growth, 2 to 3 in. high, covering only a small portion of the ground.

## Results

### Soil-moisture content

8. The soil-moisture records for the three layers are shown in fig. F1. In the surface to 6-in. layer, the soil wet and dried about the same regardless of treatment.

9. The soil in the bare treatment plots did not dry as rapidly as the soil in the other treatment areas in the 6- to 12-in. and 12- to 18-in. layers. The records for the check and frequently cultivated plots are in fairly close agreement. The soil in the one-cultivation area dried somewhat faster than that of the other treatments, especially early in the season. This probably was due to greater vegetation growth, stimulated by the early spring cultivation. The cultivation treatments did not appreciably affect soil-moisture conditions, except that the bare treatment had higher moisture contents below the 6-in. depth.

10. The effect of the cultivation treatments upon soil-moisture prediction is shown by the comparison in table F1 of these moisture records

Table F1

### Deviations Between Predicted and Measured Soil-moisture Contents of the Cultivation Test

| <u>Comparisons</u>               | <u>Average Deviations, in. per 6 in.</u> |                           |
|----------------------------------|--|---------------------------|
|                                  | <u>0- to 6-in. Layer</u>                 | <u>6- to 12-in. Layer</u> |
| <u>Clipped predicted and:</u>    |  |                           |
| Check                            | 0.18                                     | 0.20                      |
| One cultivation                  | 0.24                                     | 0.25                      |
| Frequently cultivated            | 0.24                                     | 0.21                      |
| <u>Herbaceous predicted and:</u> |  |                           |
| Check                            | 0.16                                     | 0.25                      |
| One cultivation                  | 0.24                                     | 0.23                      |
| Frequently cultivated            | 0.20                                     | 0.23                      |
| <u>Bare predicted and:</u>       |  |                           |
| Bare                             | 0.13                                     | 0.18                      |



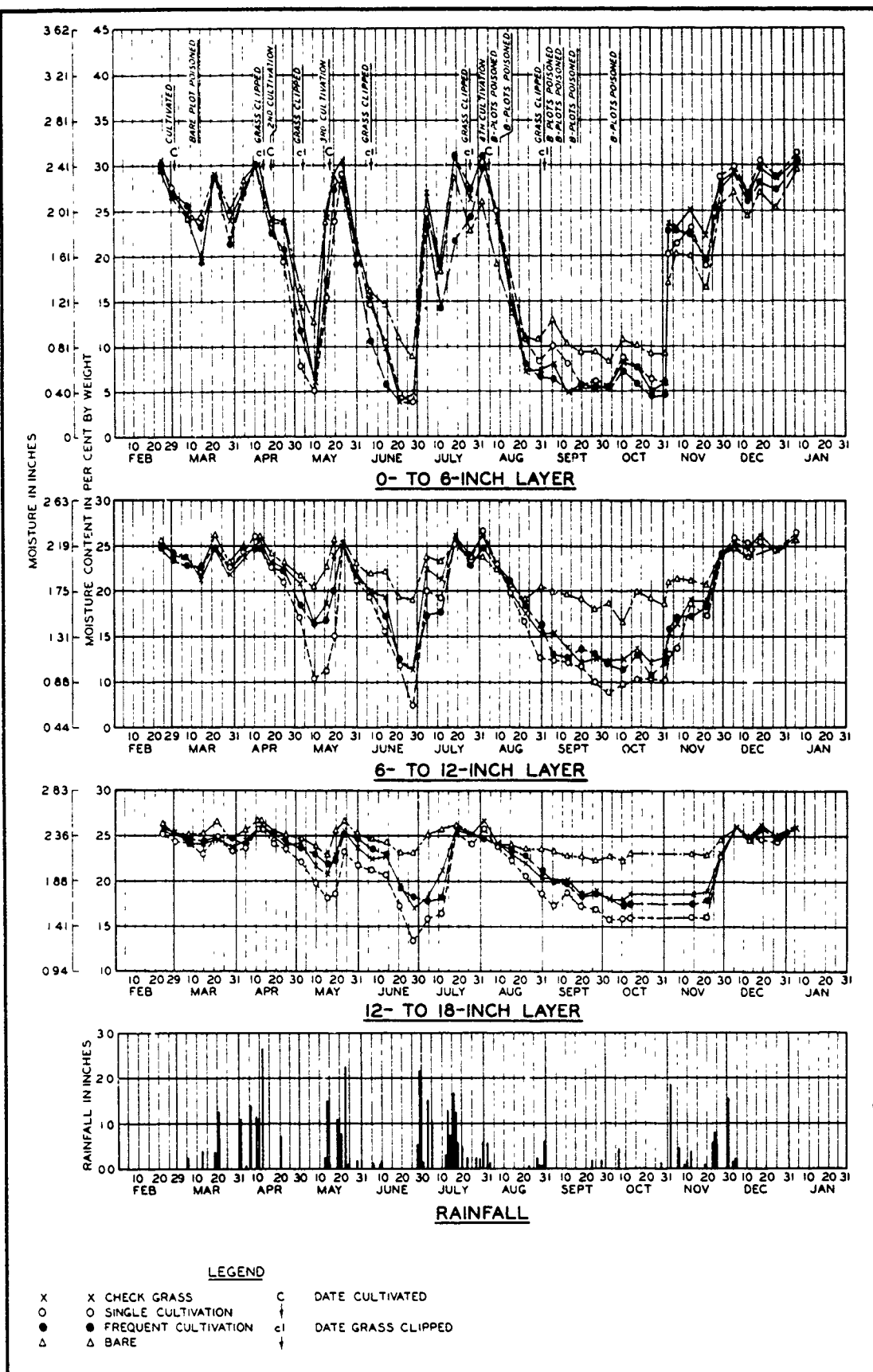


Fig. F1. The effect of cultivation on soil-moisture content at three depths cultivation site, Vicksburg, Miss., 1955



with predictions based on relations derived from the adjacent radiation site. The radiation site had bare, frequently clipped, and natural herbaceous plots (see Report 4). The period of record used for derivation of prediction relations at the bare and the herbaceous sites extended from March 1953 to January 1955. The record for the clipped site extended from March 1954 to January 1955. The cultivation study was conducted from February 1955 to February 1956.

11. The first group of comparisons in table F1 utilizes the prediction relations derived from the soil-moisture record of the clipped radiation plot. The soil-moisture content for the year of the cultivation study was predicted, using these relations, and then compared with measurements made at the various plots. The first comparison was between the prediction and the measured moisture contents of the cultivation check plots. The check plot treatment corresponds to the clipped radiation plot. Results are fairly good as deviations averaged 0.19 in. The next entries represent deviations of the prediction from measurements taken at the cultivation treatments. Though they are not as good, they show no particular difference among themselves.

12. In the second group, a prediction was made using relations derived from the record of the unclipped herbaceous radiation plot. The comparisons are similar to those of the first group. Deviations of predicted values do not show appreciable differences by treatments. For prediction purposes, therefore, either the clipped or the herbaceous relations can be used for these cultivated areas.

13. Results of the prediction using bare sites were about the same but the bare treatment had to be predicted using relations derived from other bare areas.

#### Bulk-density comparisons

14. Bulk-density data collected in the course of the cultivated study were analyzed to determine differences between treatments, dates, blocks, and ends of the plots. Results are shown in table F2. Differences exist between layers as bulk density increases with depth. The two blocks showed no difference, which indicated that the area was uniform from south to north. A difference, however, did exist between the east and west ends of the plots. The plot layout and sampling were made on the east-west



Table F2

Average Bulk-density Values Obtained in a Cultivation Test

| <u>Test Location<br/>or Date</u> | <u>Bulk Density, g per cm<sup>3</sup></u> |                               |                               |                                |                                |
|----------------------------------|---|-------------------------------|-------------------------------|--------------------------------|--------------------------------|
|                                  | <u>0- to 3-<br/>in. Layer</u>             | <u>3- to 6-<br/>in. Layer</u> | <u>6- to 9-<br/>in. Layer</u> | <u>9- to 12-<br/>in. Layer</u> | <u>0- to 12-<br/>in. Layer</u> |
| Layer                            | 1.316                                     | 1.366                         | 1.442                         | 1.483                          | 1.402                          |
| <u>Blocks</u>                    |   |                               |                               |                                |                                |
| South                            | 1.318                                     | 1.361                         | 1.440                         | 1.489                          | 1.402                          |
| North                            | 1.314                                     | 1.372                         | 1.443                         | 1.477                          | 1.402                          |
| <u>Ends</u>                      |   |                               |                               |                                |                                |
| East                             | 1.310                                     | 1.342                         | 1.402                         | 1.465                          | 1.380                          |
| West                             | 1.322                                     | 1.390                         | 1.481                         | 1.501                          | 1.424                          |
| <u>Treatments</u>                |   |                               |                               |                                |                                |
| One cultivation                  | 1.309                                     | 1.319                         | 1.402                         | 1.473                          | 1.376                          |
| Bare                             | 1.331                                     | 1.390                         | 1.457                         | 1.486                          | 1.416                          |
| Check                            | 1.310                                     | 1.399                         | 1.466                         | 1.480                          | 1.415                          |
| Cultivated<br>frequently         | 1.314                                     | 1.357                         | 1.442                         | 1.493                          | 1.401                          |
| <u>Dates (1955)</u>              |   |                               |                               |                                |                                |
| 2/25                             | (1.259)                                   | (1.402)                       | 1.461                         | 1.494                          | 1.404                          |
| 3/15                             | 1.302                                     | 1.354                         | 1.459                         | 1.500                          | 1.404                          |
| 5/17                             | 1.301                                     | 1.375                         | 1.441                         | 1.465                          | 1.396                          |
| 8/9                              | 1.351                                     | 1.390                         | 1.436                         | 1.476                          | 1.413                          |
| 11/17                            | 1.309                                     | 1.346                         | 1.412                         | 1.480                          | 1.387                          |

axis; hence this range in values presumably was sampled on each date. No differences are shown between cultivation treatments except in the one-cultivation treatments which had a lower bulk density in the 3- to 6-in. and 6- to 9-in. layers. This treatment had the greatest vegetative growth and probably, therefore, the most roots in the soil which might have lowered bulk densities.

15. The bulk density does not change with sampling date. The 0- to 6-in. values taken on February 25, 1955, had been omitted from the analysis of the above figures because they were sampled before the plowing treatment.

16. Statistical analysis of these data indicated that results should be reported to the nearest 0.10 g per cm<sup>3</sup> when duplicate samples are taken.



To obtain bulk densities accurately to 0.05 g per cm<sup>3</sup>, at least 12 samples must be averaged.

17. The bulk-density variation is great enough to explain most of the soil-moisture variation from point to point. The results further show that bulk density for a given layer remains fairly constant throughout the period of test, and even between treatments.

#### Soil strength

18. Satisfactory regressions of cone index and remolding index against moisture content were derived as shown in fig. F2. The cone and remolding indexes can be shown as linear regressions; the rating cone index relation derived from them is definitely not linear. Also, it was found that soil strength of the 6- to 12-in. layer did not change with cultivation of the 0- to 6-in. layer.

#### Conclusions

19. Results indicate that prediction relations derived from data collected at a noncultivated site give reasonable predictions of soil moisture for cultivated sites in which grass grew back after plowing. The 6- to 12-in. layer of bared areas must be predicted during summer dry periods from relations derived from bared areas. It can also be concluded that within a growing season the bulk density remains constant, once the area has been plowed, and that soil strength in the 6- to 12-in. layer does not change after cultivation.



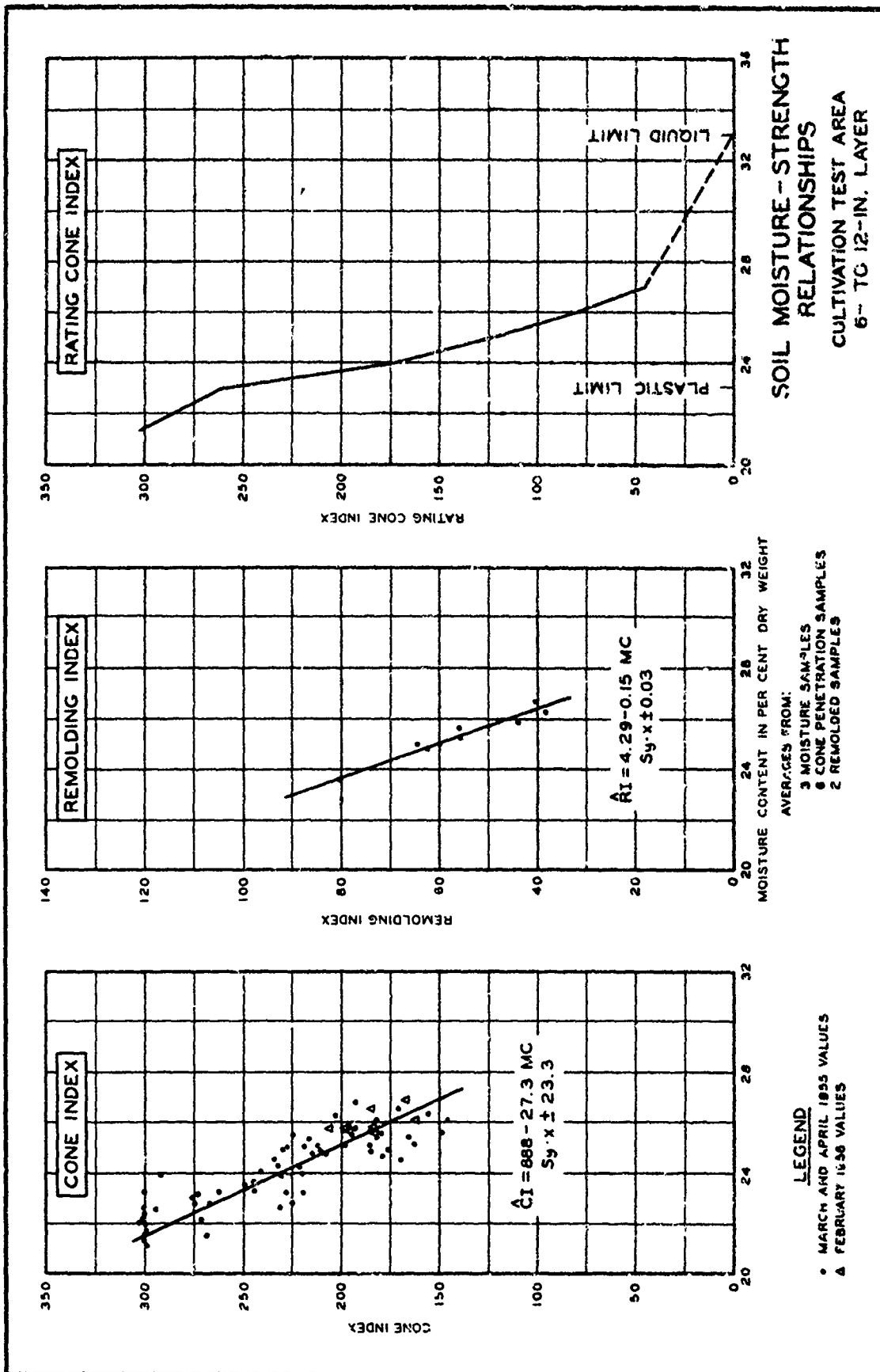


Fig. F2. Soil moisture-strength relations. Cultivation test area, 6- to 12-in. layer